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CATALOGUE

OF THE

BATRACHIA SALIENTIA

IN THE

COLLECTION

OF THE

BRITISH MUSEUM.

(Nat. Hist.)
Dept. of Zoology.

BY

DR. ALBERT GÜNTHER.

SMITHSONIAN INSTITUTION
Smithsonian Institution
0 727
National Museum

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PREFACE.

The object of this Catalogue is to give a description of all the species of Tail-less Batrachians (*Batrachia Salientia*) in the Collection of the British Museum, with an indication of their history and origin, and an account of the species to be found in other Collections which are desiderata to the National Museum.

Dr. Günther observes:—"The system according to which I have arranged the *Batrachia Anura* in the Collection of the British Museum differs in many respects from those hitherto employed. I have explained, in a paper in the 'Proceedings of the Zoological Society,' 1858, p. 339, the reasons which have induced me to subordinate the character of the maxillary teeth to that of the dilated or tapering toes, in dividing the section *Opisthoglossa*. By so doing we obtain two parallel series, in each of which corresponding members occur in regular succession. I am not afraid of separating these animals into too many families, and have established them even for one or two

genera, where the characters seemed sufficient. As ye' we know little (except of the borders) of Africa, Australia, and Tropical America, and there are but few collectors who have directed particular attention to this class of animals. Thus we may not only affirm with some certainty that many families at present poor in species will soon be enriched, but we may even venture to prognosticate that at least some of the missing forms, which I have pointed out, will be discovered. The progress made in our knowledge of the *Batrachia Anura* during the last fifty years may be seen at once by the following comparison of the number of species given by different authors :—

Shaw in 1802	51 species.
Tschudi in 1838	110 species.
Duméril & Bibron (vol. ix.) in 1854 ..	164 species.
The present Catalogue in 1858	280 species.

"There are, besides, many species which I could not introduce into this Catalogue, on account of the imperfect descriptions given of their systematic characters.

"Dr. J. E. Gray has collected in his MSS. (the free use of which, with his usual kindness, he has permitted me) diagnoses of many species from papers scattered through various journals, and so directed my attention to species which I might otherwise have overlooked. He proposed to arrange these animals into two groups, according to the form of the diapophysis of the sacral vertebra. I fully acknow-

ledge the systematic importance of this character, but I consider it to be of subordinate value.

"I have to return my best thanks to my friend and fellow-collegian Eduard v. Martens, M.D., for supplying me with detailed accounts of species in the Berlin Museum which are wanting in this Collection.

"Finally, I cannot forbear noticing a very bad practice, now prevalent, by which new species run the risk of being overburdened with synonyms, and thrown from the first into a state of confusion. In several of the large Collections new species remain *named* for years, without being established in a regular way by published descriptions. These names are then brought before the public by occasional visitors, especially by dealers, who often apply them to specimens of quite another species, without any further notice where or by whom they were given. Little better is the practice of publishing lists of species, where the new ones are named without any diagnosis. If an author does not choose to give science the benefit of his knowledge of a new species, why not mention it as '*Liophis*, n. sp.,' '*Hyperolius*, n. sp.,' '*Bufo*, n. sp.,' instead of *Liophis regalis*, X, *Hyperolius gigas*, Y, *Bufo anomalus*, Z? It is by such malpractice that species come to have, from the origin, different names in different countries. Wherever I have met with specimens bearing such a name, I have accepted it when well chosen, or when I have been able to discover where or by whom it was

given; but having now found that such names are often joined to species for which they were not originally intended by the authors, I intend henceforth to reject them altogether, and not to introduce them into the synonymy unless published with a proper diagnosis.

"The number of specimens in the Collection of the British Museum, contained in this Catalogue, amounts to 1691.

"I am able to vouch for the correctness of the plates, which were executed by Mr. Ford under my inspection."

JOHN EDWARD GRAY.

British Museum,
July 1, 1858.

SYNOPSIS OF THE FAMILIES

OF THE

BATRACHIA SALIENTIA

OR

ANURA.

A. Without tongue: **AGLOSSA.**

I. Ear perfectly developed; eustachian tubes united; cavum tympani entirely bony. **Aglossa haplosiphona.**

a. Maxillary teeth.

1. With webbed toes, dilated processes of sacral vertebra, and without paratoids. 1. DACTYLETHRIDÆ.

b. No maxillary teeth.

1. With webbed toes, dilated processes of sacral vertebra, and without paratoids. 2. PIPIDÆ.

II. Ear imperfectly developed; eustachian tubes separated; cavum tympani absent. **Aglossa diplosiphona.**

a. With two large horizontal fangs in the intermaxillary bone. 3. MYOBATRACHIDÆ.

B. Tongue adherent in front, more or less free behind:

OPISTHOGLOSSA.

I. Fingers and toes tapering or cylindrical, not dilated at the end.
Opisthoglossa oxydactyla.

a. Maxillary teeth.
aa. Ear perfectly developed. RANINA.

a. No paratoids.
aa. Sacral vertebra not dilated.
1. Toes webbed. 4. RANIDÆ.
2. Toes free. 5. CYSTIGNATHIDÆ.

ββ. Sacral vertebra dilated.
1. Toes webbed. 6. DISCOGLOSSIDÆ.
2. Toes free. 7. ASTEROPHRYDIDÆ.

β. With paratoids.
(*aa*. Sacral vertebra not dilated?)
ββ. Sacral vertebra dilated.
1. Toes webbed. 8. ALYTIDÆ.
2. Toes free. 9. UPEROLIIDÆ.

bb. Ear imperfectly developed. BOMBINATORINA.
a. No paratoids.
aa. Sacral vertebra not dilated.
1. Toes webbed. 10. BOMBINATORIDÆ.

b. No maxillary teeth.
aa. Ear imperfectly developed. BRACHYCEPHALINA.
a. No paratoids.
(*aa*. Sacral vertebra not dilated?)
ββ. Sacral vertebra dilated.
1. Toes webbed. 11. PHRYNISCIDÆ.
2. Toes free. 12. BRACHYCEPHALIDÆ.

bb. Ear perfectly developed. BUFONINA.
a. No paratoids.
(*aa*. Sacral vertebra not dilated?)
ββ. Sacral vertebra dilated.
1. Toes webbed. 13. RHINODERMATIDÆ.
2. Toes free. 14. ENGYSTOMATIDÆ.

β. With paratoids.
(*aa*. Sacral vertebra not dilated?)
ββ. Sacral vertebra dilated.
1. Toes webbed. 15. BUFONIDÆ.

II. Fingers and toes dilated into a disk. **Opisthoglossa platydactyla.**

a. Maxillary teeth.
aa. Ear perfectly developed. HYLINA.

a. No paratoids.
aa. Sacral vertebra not dilated.
1. Toes webbed. 16. POLYPEDATIDÆ.
2. Toes free. 17. HYLODIDÆ.

ββ. Sacral vertebra dilated.
1. Toes webbed. 18. HYLIDÆ.

β. With paratoids.
(*aa.* Sacral vertebra not dilated?)
ββ. Sacral vertebra dilated.
1. Toes webbed. 19. PELODRYADIDÆ.
2. Toes free. 20. PHYLLOMEDUSIDÆ.

bb. Ear imperfectly developed. MICRHYLINA.

a. No paratoids.
(*aa.* Sacral vertebra not dilated?)
ββ. Sacral vertebra dilated.
1. Toes webbed. 21. MICRHYLIDÆ.

b. No maxillary teeth.
(*aa.* Ear imperfectly developed?)
bb. Ear perfectly developed. HYLAPLESINA.

a. No paratoids.
aa. Sacral vertebra not dilated.
1. Toes free. 22. HYLAPLESIDÆ.

ββ. Sacral vertebra dilated.
1. Toes free. 23. BRACHYMERIDÆ.
2. Toes webbed. 24. HYLÆDACTYLIDÆ.

C. Tongue free in front. **PROTEROGLOSSA.**

a. No maxillary teeth.
aa. Ear imperfectly developed.

a. With paratoids.
aa. Sacral vertebra dilated.
1. Toes webbed. 25. RHINOPHRYNIDÆ.

SYSTEMATIC INDEX.

The names of those authors are marked who first gave the *specific* denomination.

The number at the end of the name indicates the number of specimens in the Museum Collection.

The new genera and species are marked with a *.

A. AGLOSSA.

First Series.

AGLOSSA HAPLOSIPHONA.

Fam. 1. DACTYLETHRIDÆ.

a. Dactylethra, *Cuv.*
1. lævis, *Daud.* 6
2. mülleri, *Peters* 0

Fam. 2. PIPIDÆ.

a. Pipa, *Laur.*
1. americana, *Laur.* 6

Second Series.

AGLOSSA DIPLOSIPHONA.

Fam. 1. MYOBATRACHIDÆ.

a. Myobatrachus, *Schleg.*
1. paradoxus, *Schleg.* 0

B. OPISTHOGLOSSA.

First Series.

OPISTHOGLOSSA OXYDACTYLA.

Section I. RANINA.

Fam. 1. RANIDÆ.

a. Pseudis, *Wagl.*
1. paradoxa, *L.* 24
2. *minuta, *Gthr.* 1

b. Oxyglossus, *Tschudi.*
1. lima, *Tsch.* 3
2. *lævis, *Gthr.* 2

c. Tomopterna, *Bibr.*
1. adspersa, *Bibr.* 4
2. delalandii, *Bibr.* 23
3. marmorata, *Peters* 0
4. natalensis, *Smith* (App.).. 2
(Rana subsigillata, *Dum.* .. 0)

d. Rana, *auct.*
1. kuhlii, *Schleg.* 7
2. macrodon, *Kuhl* 6
3. vittigera, *Wiegm.* 45
4. tigrina, *Daud.* 35
5. grunniens, *Daud.* 1
6. hexadactyla, *Less.* 23
7. leschenaultii, *D. et B.* 1
7*a.* *occipitalis, *Gthr.* (App.) 11
8. rugosa, *Schleg.* 2
9. esculenta, *L.* 53
10. halecina, *Kalm* 22
11. palustris, *Leconte* 2
12. clamata, *Daud.* 8
12*a.* horiconensis, *Holbr.*(App.) 1
13. mugiens, *Merr.* 14
14. lecontei, *B. et G.* 6
15. temporaria, *L.* 69
16. *superciliaris, *Gthr.* 1
17. bibronii, *Hallow.* 7
18. grayi, *Smith* 10
19. mascareniensis, *D. et B.* .. 2
20. fuscigula, *D. et B.* 10
21. oxyrhynchus, *Sundev.* 4
22. galamensis, *D. et B.* 0
23. delalandii, *D. et B.* 9
24. fasciata, *Boie* 12

e. Calyptocephalus, *Bibr.*
1. gayi, *Bibr.* 1

f. Cyclorhamphus, *Tschudi.*
1. marmoratus, *D. et B.* 22

g. Pithecopsis, *Bibr.*
1. fuliginosus, *Bibr.* 0

h. Limnocharis, *Bell.*
1. fuscus, *Bell* 1

i. Hylorhina, *Bell.*
1. silvatica, *Bell* 1

k. Pyxicephalus, *Tschudi.*
1. americanus, *D. et B.* 4

l. Ceratophrys, *Boie.*
1. cornuta, *L.* 3
2. boiei, *Wied* 6
3. megastoma, *Spix* 0
4. ornata, *Bell* 4
m. Heteroglossa, *Hallow.*
1. africana, *Hallow.* 0
n. Stenorhynchus, *Smith.*
1. natalensis, *Sm.* 1

Fam. 2. CYSTIGNATHIDÆ.

a. Cystignathus, *Wagl.*
1. ocellatus, *L.* 32
2. caliginosus, *Gir.* 7
3. fuscus, *Schneid.* 9
4. gracilis, *D. et B.* 4
5. schomburgkii, *Trosch.* 1
6. tæniatus, *Gir.* 0
7. ornatus, *Holbr.* 1
7*a*. roseus, *D. et B.* (App.) .. 0
8. nodosus, *D. et B.* 2
9. senegalensis. *D. et B.* 6
10. argyreivittis, *Peters* 0
11. georgianus, *Bibr.* 18
(Borborocœtes grayi, *Bell*) 1
(Borborocœtes bibronii, *Bell*) 1
b. Pleurodema, *Tschudi.*
1. labyrinthicum, *Spix* 6
2. bufonium, *Bell* 2
3. bibronii, *Tschudi* 18
c. Limnodynastes, *Fitz.*
1. dorsalis, *Gray* 5
1*a*. peronii, *D. et B.* (App.) .. 1
2. *tasmaniensis, *Gthr.* 10
3. ornatus, *Gray* 2
d. Leiuperus, *D. et B.*
1. marmoratus, *D. et B.* 1
2. sagittifer, *Schm.* (App.) .. 0
(salarius, *Bell*) 1
(Arthroleptis, *Sm.* (App.)
1. wahlbergii, *Sm.* ..... 1)

Fam. 3. DISCOGLOSSIDÆ.

a. *Chiroleptes, *Gthr.*
1. australis, *Gray* 2
b. Pelodytes, *Fitz.*
1. punctatus, *Daud.* 4
c. Discoglossus, *Otth.*
1. pictus, *Otth.* 11
d. Leptobrachium, *Tschudi.*
1. hasseltii, *Müll.* 1
e. Megalophrys, *Kuhl.*
1. montana, *Kuhl* 4

Fam. 4. ASTEROPHRYDIDÆ.

a. Ceratophryne, *Schleg.* (App.)
1. nasuta, *Schleg.* 1
b. Asterophrys, *Tschudi.*
1. turpicola, *Müll.* 0

Fam. 5. ALYTIDÆ.

a. Alytes, *Wagl.*
1. obstetricans, *Laur.* 6
b. Scaphiopus, *Holbr.*
1. solitarius, *Holbr.* 2
c. Heleioporus, *Gray.*
1. albopunctatus, *Gray* 10

Fam. 6. UPEROLIIDÆ.

a. Uperoleia, *Gray.*
1. marmorata, *Gray* 1

Section II. BOMBINATORINA.

Fam. 1. BOMBINATORIDÆ.

a. Pelobates, *Wagl.*
1. fuscus, *Laur.* 9
2. cultripes, *Cuv.* 1
b. Bombinator, *Merr.*
1. igneus, *Rösel* 7
c. Alsodes, *Bell.*
1. monticola, *Bell* 1
d. Telmatobius, *Wiegm.*
1. peruvianus, *Wiegm.* 0

Sect. III. BRACHYCEPHALINA.

Fam. 1. PHRYNISCIDÆ.

a. Phryniscus, *Wiegm.*
1. nigricans, *Wiegm.* 5
2. *lævis, *Gthr.* 5
3. cruciger, *Mart.* 6
3*a*. bibronii, *Schmidt* (App.) 1
4. varius, *Stann.* 0
5. olfersii, *Mart.* 0

Fam. 2. BRACHYCEPHALIDÆ.

a. Pseudophryne, *Fitz.*
1. australis, *Gray* 2
2. bibronii, *D. et B.* 5
b. Brachycephalus, *Fitz.*
1. ephippium, *Spix* 13
c. *Hemisus, *Gthr.*
1. guttatum, *Rapp* 6
? marmoratum, *Peters* 0

Section IV. BUFONINA.

Fam. 1. RHINODERMATIDÆ.

a. Rhinoderma, *D. et B.*
1. darwinii, *D. et B.* 7
b. Atelopus, *D. et B.*
1. flavescens, *D. et B.* 0
c. Uperodon, *D. et B.*
1. marmoratum, *Cuv.* 7

d. *Diplopelma, *Gthr.*
1. ornatum, *D. et B.* 24

Fam. 2. ENGYSTOMATIDÆ.

a. Engystoma, *Fitz.*
1. ovale, *Schneid.* 1
2. carolinense, *Holbr.* 8
3. rugosum, *D. et B.* 1
4. microps, *D. et B.* 0
b. Breviceps, *Merr.*
1. verrucosus, *Rapp* 3
2. gibbosus, *L.* 3
c. Chelydobatrachus, *Gray.*
1. gouldii, *Gray* 3

Fam. 3. BUFONIDÆ.

a. Kalophrynus, *Tschudi.*
1. pleurostigma, *Mus. Leyd.* . 1
b. Schismaderma, *Smith* (App.).
1. carens, *Sm.* 7
c. Bufo, *auct.*
1. vulgaris, *Laur.* 30
2. chilensis, *Tschudi* 11
3. *anomalus 1
3*a.* simus, *Schmidt* (App.) .. 0
4. calamita, *Laur.* 18
5. viridis, *Laur.* 34
6. pantherinus, *Boie* 28
(angusticeps), *Smith* 6
(gariepensis, *Smith* ..... 2)
7. guineensis, *Mus. Leyd.* .. 6
8. *tuberosus, *Gthr.* 2
9. celebensis, *Mus. Leyd* 3
10. melanostictus, *Schneid.* .. 47
11. asper, *Mus. Leyd.* 3
12. biporcatus, *Schleg.* 2
13. cruentatus, *Mus. Leyd.* .. 1
14. isos, *Less.* 0
14*a.* *kelaartii, *Gthr.* (App.). . 4
15. lentiginosus, *Shaw* 46
15*a.* *intermedius, *Gthr.* (App.) 4
16. leschenaultii, *Bibr.* 0
17. *ocellatus, *Gthr.* 1
18. ornatus, *Spix* 32
19. agua, *Latr.* 44
20. nebulifer, *Gir.* 6
21. peltocephalus, *Bibr.* 4
22. d'orbignyi, *D. et B.* 6
22*a.* veraguensis, *Schmidt* (App.) 0
23. granulosus, *Spix* 8
24. gutturosus, *Latr.* 8
25. *sternosignatus, *Gthr.* 5
25*a.* pleuropterus, *Schmidt* (App.) 0
d. Otilophus, *Cuv.*
1. margaritifer, *Laur.* 14

Second Series.
OPISTHOGLOSSA PLATYDACTYLA.

Section I. HYLINA.

Fam. 1. POLYPEDATIDÆ.

a. Acris, *D. et B.*
1. gryllus, *Leconte* 17
2. pickeringii, *Holbr.* 0
b. Hylarana, *Tschudi.*
1. *macrodactyla, *Gthr.* 6
1*a.* malabarica, *D. et B.* (App.) 12
2. erythræa, *Schleg.* 8
3. chalconota, *Schleg.* 3
4. albolabris, *Hallow.* 6
5. madagascariensis, *Dum.* .. 0
c. Ixalus, *D. et B.*
1. aurifasciatus, *Schleg.* 4
2. *variabilis, *Gthr.* 12
3. leucorhinus, *Mart.* 0
4. pœcilopleurus, *Mart.* 0
5. *natator, *Gthr.* 3
6. *guttatus, *Gthr.* 1
d. Polypedates, *D. et B.*
1. *microtympanum, *Gthr.* .. 15
2. maculatus, *Gray* 53
3. quadrilineatus, *Wiegm.* .. 22
4. *appendiculatus, *Gthr.* 1
5. *eques, *Gthr.* 11
6. bürgeri, *Schleg.* 0
7. *schlegelii, *Gthr.* 3
8. *afghana, *Gthr.* 3
9. goudotii, *Bibr.* 4
10. junghuhnii, *Bleeker* 0
e. Rhacophorus, *Kuhl.*
1. reinwardtii, *Boie* 5
2. *maximus, *Gthr.* 4
3. *pardalis, *Gthr.* 6
f. Cornufer, *Tschudi.*
1. unicolor, *Tsch.* 0
2. dorsalis, *Dum.* 0
g. Elosia, *Tschudi.*
1. nasus, *Licht.* 1
h. Chiromantis, *Peters.*
1. xerampelina, *Peters* 0
i. Hyperolius, *Rapp.*
1. viridiflavus, *D. et B.* 2
2. marmoratus, *Rapp* 21
3. horstockii, *Schleg* 6
4. *parallelus, *Gthr.* 3
5. *guttulatus, *Gthr.* 3
6. fornasinii, *Bianc.* 0
7. tæniatus, *Peters* 0
8. argus, *Peters* 0
9. flavoviridis, *Peters* 0
10. tettensis, *Peters* 0
11. marginatus. *Peters* 0

12. modestus, *Schleg.* (App.) .. 2
13. madagascariensis, *D. et B.* 0
14. *ocellatus, *Gthr.* 2
15. *plicatus, *Gthr.* 2
16. seychellensis, *Tschudi* 0
(Eucnemis bicolor, *Gray*).... 1

k. *Leptopelis, *Gthr.*
1. natalensis, *Sm.* (App.) .. 11

Fam. 2. Hylodidæ.

a. Crossodactylus, *D. et B.*
1. gaudichaudii, *D. et B.*.... 0

b. Phyllobates, *Bibr.*
1. bicolor, *Bibr.* 0
2. melanorhinus, *Berthold* .. 0

c. Hylodes, *Fitz.*
1. lineatus, *Schneid.*..... 14
2. martinicensis, *Bibr.*..... 15
3. ricordii, *D. et B.* 3
4. oxyrhynchus, *D. et B.*.... 0
5. laticeps, *Dum.* 0
6. *conspicillatus, *Gthr.* 1
6*a*. fitzingeri, *Schmidt* (App.) 0
7. luteolus, *Gosse* 4
8. leptopus, *Bell* 1

d. *Platymantis, *Gthr.*
1. vitiana, *Bibr.* 4
2. *plicifera, *Gthr.* 4

Fam. 3. Hylidæ.

a. Litoria, *Tschudi.*
1. freycineti, *Bibr.* 1
2. nasuta, *Gray.* 3
3. punctata, *Dum.* (App.) .. 0
4. marmorata, *Dum.* (App.) . 0

b. Pseudacris, *Fitz.*
1. nigrita, *Leconte* 2

c. Hyla, *Laur.*
1. albomarginata, *Spix*..... 15
2. langsdorfii, *D. et B.*..... 4
3. geographica, *Spix* 7
4. pardalis, *Spix* 9
5. maxima, *Laur.*..... 3
5*a*. pugnax, *Schmidt* (App.).. 0
6. xerophylla, *D. et B.*..... 2
7. *fasciata, *Gthr.* 1
8. doumercii, *D. et B.* 0
9. punctata, *Schneid.* 0
10. leprieurii, *D. et B.* 0
11. *multifasciata, *Gthr.* 3
12. boans, *Daud.*..... 0
13. levaillantii, *D. et B.*..... 0
14. *lichenosa, *Gthr.*..... 10
15. cynocephala, *D. et B.* 0
16. versicolor, *Daud.*..... 24
17. venulosa, *Laur.* 10
18. marmorata, *Laur.*..... 2
19. corticalis, *Burm.* 0
20. carolinensis, *Penn.* 6
21. agrestis, *Bell.*..... 3
22. prasina, *Burm.* 0
23. baudinii, *D. et B.*..... 15
24. capistrata, *Reuss* 0
24*a*. splendens, *Schmidt* (App.) 0
25. vauterii, *Bibr.* 1
26. aurantiaca, *Daud.*..... 1
27. fusca, *Daud.*..... 1
28. luteola, *Wied* 0
29. arborea, *L.* 60
30. *euphorbiacea, *Gthr.* 6
30*a*. molitor, *Schmidt* (App.).. 0
31. rubra, *Daud.*..... 16
32. zebra, *D. et B.* 0
33. leucomelas, *D. et B.*..... 1
34. squirella, *Daud.* 1
35. ewingii, *D. et B.* 20
36. rubella, *Gray* 3
37. leucophyllata, *Beireis* 2
38. *rhodopepla, *Gthr.* 1
39. peronii, *Bibr.* 3
40. adelaidensis, *Gray* 26
41. jervisiensis, *D. et B.* 0
42. aurea, *Less.* 52
43. verreauxii, *Dum.*..... 0
44. citropus, *Péron*..... 0

d. *Nototrema, *Gthr.*
1. marsupiatum, *D. et B.*.... 19

e. Opisthodelphys, *Gthr.*
1. ovifera, *Weinl.*..... 1

f. Trachycephalus, *D. et B.*
1. marmoratus, *Bibr.* 15
2. geographicus, *D. et B.*.... 2
3. dominicensis, *Tschudi* 4
4. lichenatus, *Gosse* 10

Fam. 4. Pelodryadidæ.

a. *Pelodryas, *Gthr.*
1. cæruleus, *White* 13

Fam. 5. Phyllomedusidæ.

a. Phyllomedusa, *Wagl.*
1. bicolor, *Boddaert* 20

Section II. Micrhylina.

Fam. 1. Micrhylidæ.

a. Micrhyla, *D. et B.*
1. achatina, *Boie* 1

Section III. HYLAPLESINA.

Fam. 1. HYLÆDACTYLIDÆ.

a. Kaloula, *Gray.*
1. baleata, *Müll.* 8
2. pulchra, *Gray* 7
3. picta, *Bibr.* 5

Fam. 2. BRACHYMERIDÆ.

a. Brachymerus, *Smith.*
1. bifasciatus, *Smith*..... 7

Fam. 3. HYLAPLESIDÆ.

a. Hylaplesia, *Boie.*
1. tinctoria, *Schneid.* 16
2. picta, *Tschudi* 6
3. speciosa, *Schmidt*..... 0
4. pumilio, *Schmidt* 0
5. lateralis, *Gay* 0

C. PROTEROGLOSSA.

Section I. RHINOPHRYNINA.

Fam. 1. RHINOPHRYNIDÆ.

a. Rhinophrynus, *D. et B.*
1. dorsalis, *D. et B.*..... 6

GEOGRAPHICAL INDEX.

PALÆARCTIC REGION.

Rana rugosa.
esculenta.
temporaria.
Pelodytes.
Discoglossus.
Alytes.
Pelobates.
Bombinator.
Bufo vulgaris.
calamita.
viridis.
pantherinus.
Polypedates schlegelii.
Hyla arborea.

INDIAN REGION.

Oxyglossus.
Rana kuhlii.
macrodon.
vittigera.
tigrina.
grunniens.
hexadactyla.
leschenaultii.
(esculenta.
temporaria.)
Leptobrachium.
Megalophrys.
Ceratophryne.
Asterophrys.
Uperodon.
Diplopelma.
Bufo vulgaris.
celebensis.
melanostictus.
asper.
kelaartii.
biporcatus.
cruentatus.
isos.
Kalophrynus.
Hylarana macrodactyla.
malabarica.
erythræa.
chalconotus.
Ixalus.

Polypedates microtympanum.
maculatus.
quadrilineatus.
appendiculatus.
eques.
bürgeri.
Polypedates afghana.
Rhacophorus.
Cornufer dorsalis.
Platymantis plicifera.
Micrhyla.
Kaloula.

NORTH AMERICAN REGION.

Rana halecina.
palustris.
clamata.
horiconensis.
mugiens.
temporaria.
(var. silvatica.)
Cystignathus ornatus.
Scaphiopus.
Engystoma carolinense.
Bufo chilensis (Californ.).
lentiginosus.
Acris.
Pseudacris.
Hyla versicolor.
carolinensis.
squirella.

NEOTROPICAL REGION.

Pipa.
Pseudis.
Rana lecontei.
Calyptocephalus.
Cyclorhamphus.
Pithecopsis.
Leiuperus.
Limnocharis.
Hylorhina.
Pyxicephalus.
Ceratophrys.
Cystignathus ocellatus.
caliginosus.
fuscus.
gracilis.
roseus.
schomburgkii.
tæniatus.
nodosus.
Pleurodema.
Alsodes.
Phryniscus.
Brachycephalus.
Rhinoderma.
Atelopus.
Engystoma.
Bufo chilensis.
anomalus.
simus.
lentiginosus (Mexico).
intermedius.
leschenaultii.
ocellatus.
ornatus.
Bufo agua.
nebulifer.
peltocephalus.
d'orbignyi.
veraguensis.
granulosus.
gutturosus.
sternosignatus.
pleuropterus.
Otilophus margaritifer.
Elosia.
Crossodactylus.
Phyllobates.
Hylodes.
Hyla albomarginata.
langsdorfii.
geographica.
pardalis.
maxima.
pugnax.
xerophylla.
fasciata.
doumercii.
punctata.
leprieurii.
boans.
levaillantii.
lichenosa.
cynocephala.
versicolor (Mex.).
venulosa.
marmorata.
corticalis.
agrestis.

Hyla prasina.
baudinii.
capistrata.
splendens.
vauterii.
aurantiaca.
fusca.
luteola.
euphorbiacea.
molitor.
rubra.
Hyla zebra.
leucomelas.
leucophyllata.
rhodopepla.
Nototrema.
Opisthodelphys.
Trachycephalus.
Phyllomedusa.
Hylaplesia.
Rhinophrynus.

ÆTHIOPIAN REGION.

Dactylethra.
Tomopterna.
Rana occipitalis.
superciliaris.
bibronii.
grayi.
mascareniensis.
fuscigula.
oxyrhynchus.
galamensis.
delalandii.
fasciata.
Heteroglossa.
Stenorhynchus.
Cystignathus senegalensis.
argyreivittis.
Arthroleptis.
Hemisus.
Breviceps.
Schismaderma.
Bufo pantherinus.
angusticeps.
guineensis.
tuberosus.
Hylarana albolabris.
madagascariensis.
Polypedates goudotii.
Chiromantis.
Hyperolius.
Leptopelis.
Brachymerus.

AUSTRALIAN REGION.

Myobatrachus.
Cystignathus georgianus.
Limnodynastes.
Chiroleptes.
Heleioporus.
Uperoleia.
Pseudophryne.
Chelydobatrachus.
(Eucnemis) bicolor.
Litoria.
Hylarana erythræa.
Cornufer unicolor.
Platymantis vitianus.
Hyla ewingii.
rubella.
peronii.
adelaidensis.
jervisiensis.
aurea.
citropus.
Pelodryas.

CATALOGUE

OF

BATRACHIA SALIENTIA.

Suborder I. BATRACHIA SALIENTIA.

Body short, depressed, without any tail.

A. AGLOSSA.

Batrachia Salientia seu Anoura without tongue.

First Series. AGLOSSA HAPLOSIPHONA.

Aglossa with the eustachian tubes united into one pharyngea orifice.

Fam. 1. DACTYLETHRIDÆ.

Haplosiphona with maxillary teeth, webbed toes, and with the processes of the sacral vertebra dilated.

1. DACTYLETHRA.

Head flat, rounded in front; no teeth in palate; tympanum hidden; paratoids none; eustachian tubes united into one orifice in the middle of palate, large. Fingers four, pointed, quite free; toes five, broadly webbed, the first three provided with a sharply pointed nail. Diapophyses of sacral vertebra much dilated. Back in both sexes smooth. Western and Southern Africa.

Dactylethra, *Cuv. Règne Anim.*; *Tschudi, Classif. der Batrach.* p. 55, 89; *Dum. & Bibr.* viii. p. 762.

Xenopus, *Wagl. Isis*, 1827, p. 726, and *Syst. Amph.* p. 199.
Leptopus, sp., *Mayer, Anal.* p. 34.
Pipa, sp., *Merr. Tent.* p. 180.
Bufo, sp., *auct. prior.*

1. Dactylethra lævis.

Bufo lævis, *Daud. Hist. Rain.* p. 85. pl. 30. f. 1, and *Rept.* viii. p. 171.
Pipa lævis, *Merr. Tent.* p. 180.
—— bufonia, *id. l. c.*
Leptopus oxydactylus, *Mayer, Anal.* p. 34.
Dactylethra capensis, *Cuv. Règne Anim.*; *Dum. & Bibr.* p. 765. pl. 92. f. 1.
Xenopus boiei, *Wagl. Isis*, 1827, p. 726, and *Syst.* p. 199.
Dactylethra boiei, *Tschudi, l. c.*

Ashy brown, veined with blackish. Tarsus and metatarsus without any tubercle or spur.

a. Large specimen: female. Port Natal. Presented by the Rev. H. Calloway.
b. Adult. Africa. From Mr. Frank's Collection.
c, *d*. Half-grown. West Africa. From Mr. Fraser's Collection.
e. Large specimen: stuffed. Cape of Good Hope.

2. Dactylethra mülleri.

Peters, Monatsber. der Berlin. Acad. 1844, p. 37, and *Wiegm. Arch.* 1855, p. 58; *Hallow. Proc. Ac. Nat. Sc. Philad.* 1857, p. 65.

Black above, dark brown below; a cutaneous appendage below the eye; a spur at the base of the first toe. Mozambique; Gaboon.

Fam. 2. PIPIDÆ.

Haplosiphona without maxillary teeth, with webbed toes, and with the processes of the sacral vertebra dilated.

1. PIPA.

Head short, broad, very flat, triangular; teeth none in jaws nor in palate; tympanum hidden; paratoids none; eustachian tubes united, in the middle of palate, very small. Fingers four, each ending in four appendages; toes five, simple at the tip, broadly webbed. Sacral vertebra much dilated. Female with pouches on the back. S. America.

Pipa, *Laur. Syn.* 1788; *Merr. Tent.* p. 179; *Cuv. Règne Anim.*; *Dum. & Bibr.* viii. p. 767.
Asterodactylus, *Wagl. Syst. Amph.* p. 199; *Tschudi, Class. Batrach.* p. 89.
Leptopus, sp., *Mayer, Anal.* p. 34.
Bufo, sp., Rana, sp., *auct. prior.*

1. Pipa americana.

Pipa americana, *Seba*, i. 77. 1–4; *Laur. Syn.* p. 25; *Cuv. Règne Anim.*; *Dum. & Bibr.* viii. p. 773. pl. 92. f. 2; *Merian, Ins. Sur.* t. 59.
Rana pipa, *Linn. Mus. Ad. Fried.* p. 121, and *Syst. Nat.* p. 354; *Daub. Encycl. Méth. Erpét.* p. 662; *Lacép. Quadr. Ovip.* i. p. 600; *Bonnat. Encycl.* p. 14; *Shaw, Zool.* iii. p. 167. pl. 50, 51; *Blumenb. Abbildg.* t. 36; *Breyer, Observ. Anat. Diss. Præs. Rudolphi, Berl.* 1811; *Mayer, Nov. Act.* 1825, p. 527. t. 49.
—— dorsigera, *Schneid. Hist. Amph.* p. 121. t. 1, 2.
Bufo dorsiger, *Latr. Rept.* ii. p. 120; *Daud. Hist. Rain.* p. 85, and *Rept.* viii. p. 172.
Pipa tedo, *Merr. Tent.* p. 179.
—— curucuru, *Spix, Spec. Nov.* t. 22. f. 1, 2.
Leptopus asterodactylus, *Mayer, Anal.* p. 34.
Pipa dorsigera, *Gravenh. Delic.* p. 70.
Asterodactylus pipa, *Wagl. Syst.* p. 199; *Tschudi, l. c.* p. 89.

Olive-brown or blackish, beneath whitish, sometimes spotted.

a. Skeleton. Tropical America.
b. Female with young on the back. Tropical America.
c. Female with young on the back. Tropical America.
d. Male. Tropical America. Belly black, white-spotted.
e. Male. British Guiana. Presented by Sir R. Schomburgk. Belly pale, with a dark central streak.

Second Series. AGLOSSA DIPLOSIPHONA.

Aglossa with separated ostia pharyngea of the eustachian tubes.

Fam. 1. MYOBATRACHIDÆ.

Only one genus.

1. MYOBATRACHUS.

Teeth none, except two large horizontal fangs in the intermaxillary bone; tympanum hidden; paratoids none; eustachian tubes not united, behind the eyes. Fingers four, cylindrical, tapering; toes five, not webbed. Sacral vertebra ?

Myobatrachus, (*Schlegel*) *Gray, Proc. Zool. Soc.* 1850, p. 9, and *Ann. Nat. Hist.* 1851, p. 70.

1. Myobatrachus paradoxus.

(*Schlegel*) *Gray, l. c.*

Above brownish grey, beneath greyish. Swan River.

B. OPISTHOGLOSSA.

Batrachia Salientia seu Anoura with a tongue, adherent in front and more or less free behind.

First Series. OPISTHOGLOSSA OXYDACTYLA.

Opisthoglossa with tapering or cylindrical fingers and toes.

Section I. **Ranina.**

O. oxydactyla with maxillary teeth and well-developed ear.

Fam. 1. RANIDÆ.

Ranina with webbed toes, cylindrical processes of sacral vertebra, and without paratoids.

Synopsis of the Genera.

1. **Pseudis.** First finger opposite to the three others. South America.
2. **Oxyglossus.** Toes entirely webbed; vomerine teeth none. East Indies.
3. **Tomopterna.** Toes half-webbed; a flat sharp-edged spur on the metatarsus; lower jaw with two bony prominences. South Africa.
4. **Rana.** No finger opposite to the others; one or two blunt tubercles on the metatarsus; crown covered with a soft skin; tongue deeply nicked behind; vomerine teeth. Cosmopolitan.
5. **Sphærotheca.** Head with swollen spherical occiput; toes half-webbed; a flat sharp-edged spur on the metatarsus. East Indies.
6. **Calyptocephalus.** Crown with a rugose shield; vomerine teeth in a straight line, in the middle interrupted. Chili.
7. **Cyclorhamphus.** Toes half-webbed; vomerine teeth in two groups; tongue entire behind. Chili.
8. **Pithecopsis.** A large gland on each side; vomerine teeth in two oblique series; tongue entire behind. Brazil.
9. **Leiuperus.** Toes webbed only at the base; skin granular; no vomerine teeth. South America.
10. **Limnocharis.** Toes webbed only at the base; skin smooth; no vomerine teeth. Brazil.

11. **Hylorhina.** Vomerine teeth in one straight uninterrupted series; tongue entire behind. Chili.

12. **Pyxicephalus.** Toes half-webbed; a flat sharp-edged spur on the metatarsus; vomerine teeth in one straight line, interrupted in the middle. Tropical America.

13. **Ceratophrys.** Edge of upper eyelid more or less produced into a point, so as to form a long horn or only a triangle. South America.

14. **Heteroglossa.** No vomerine teeth; tongue deeply notched behind, attached by a cylindrical pedicel at the centre. West Africa.

1. PSEUDIS.

Skin smooth. Fingers four, quite free, pointed, the first opposite to the following; toes entirely webbed. Tongue subcircular, entire behind; palatine teeth in a nearly uninterrupted straight line between the inner nostrils; eustachian tubes small; tympanum rather indistinct. Males with subgular vocal sac. South America.

Pseudis, *Wagl. Syst. Amph.* p. 203; *Tschudi, Batr.* p. 80; *Dum. & Bibr.* viii. p. 327.
Proteus, *Laur. Syn. Rept.* p. 36.
Rana, sp., *auct. prior.*

1. Pseudis paradoxa.

Rana piscis, *Merian, Ins. Sur.* t. 71; *Linn. Mus. Ad. Fried.* p. 49; *Edwards, Phil. Trans.* li. p. 653. f. 15 *a*, *b*; *Seba*, i. 78. 15–21.
—— paradoxa, *Linn. Syst. Nat.*; *Shaw, Zool.* iii. p. 120. pl. 36; *Daud. Rain.* p. 67. pl. 22, 23, and *Rept.* viii. p. 130; *Merr. Tent.* p. 176; *Cuv. Règne Anim.*; *Gravenh. Delic.* p. 34; *Griff. Animal Kingd.* ix. p. 393.
Proteus raninus, *Laur. Syn.* p. 36; *Daub. Quadr. Ovip.* p. 640; *Bonnat. Erpét.* p. 5; *Lacép. Quadr. Ovip.* i. p. 547; *Latr. Rept.* ii. p. 162.
Pseudis paradoxa, *Wagl. Syst.* p. 203; *Tschudi, Batr.* p. 80.
—— merianæ, *Dum. & Bibr.* p. 330. pl. 86. f. 2.

Snout tapering, rather pointed in front; no white streak behind the eye, nor on the sides.

a. Larva. Demerara. Presented by Dr. Hancock.
b. Larva. Demerara. Presented by Dr. Hancock.
c. Larva. Demerara. Presented by Dr. Hancock.
d. Larva. Demerara. Presented by Dr. Hancock.
e. Larva: bad state. Demerara. Presented by Dr. Hancock.
f-h. Larva. Demerara. Presented by Dr. Hancock.
i. Larva. Demerara. From Mr. Snellgrove's Collection.
k. Larva. Demerara. From Mr. Snellgrove's Collection.
l. Adult. Demerara. Presented by Captain Sabine.

m-p. Larvæ. South America.
q. Larva. South America.
r-t. Larvæ. South America.
u, v. Larva and adult. South America.
w. Adult: stuffed. South America.
x. Adult: stuffed. South America. Presented by Mr. Leadbeater.

2. Pseudis minuta.

Snout rather broad, depressed, rounded in front. An oblique white streak from the back edge of eye to the angle of mouth; a white stripe from the shoulder to the hypochondrium.

a. (Half-grown?): male. South America. Presented by Charles Darwin, Esq.

This species agrees in nearly all its characters with *Ps. paradoxa*, but is at once distinguished by its much smaller size, our specimen being only one-sixth of the size of a young *Ps. paradoxa* which has not quite lost the tail. Above brown, with darker spots; belly white, with some small irregular brown spots; inner side of legs with waved brown longitudinal bands; two white streaks on each side as mentioned. Vomerine teeth in a nearly uninterrupted straight line. On each side of the tongue a long cleft for two separated internal subgular vocal sacs (perhaps united in full-grown specimens). Length from the snout to anus 1″; hinder foot twice as long as body.

2. OXYGLOSSUS.

Skin with warts or nearly smooth. Fingers quite free; toes webbed to their tips by a very extensible membrane; tongue rather elongate, not notched behind; vomerine teeth none; eustachian tubes small; tympanum indistinct. East Indies.

Oxyglossus, *Tschudi, Batr.* p. 85; *Dum. & Bibr.* viii. p. 332.

1. Oxyglossus lima.

Bombinator lima, *Mus. Lugd. Bat. et Francof.*
Oxyglossus lima, *Tschudi, Batr.* p. 85; *Dum. & Bibr.* p. 334. pl. 86. f. 4.

Skin covered with small conical tubercles; beneath with symmetrical rows of prominent pores; tongue elongate, produced in a pointed end behind; metatarsus with two tubercles; above brown, sometimes with a paler dorsal streak.

a-c. Adult and half-grown. Java. From the Leyden Museum.

2. Oxyglossus lævis. (Plate I. fig. A.)

Skin smooth, with a few scattered, small, smooth tubercles; tongue ovoid, rounded, not pointed behind; metatarsus with only one tubercle. Brown, darker variegated, with or without dorsal streak; beneath whitish, throat brown-spotted.

a. Adult. Philippine Islands. With yellowish dorsal streak.
b. Adult. Philippine Islands. Without yellowish dorsal streak.

3. TOMOPTERNA.

Head large and thick, muzzle short; extremities moderate. Tongue large, oval, free, and deeply nicked behind. Vomerine teeth in two oblique series. Lower jaw with two bony prominences. Eustachian tubes small; tympanum distinct. Fingers free; toes half-webbed; a flat sharp-edged spur on the metatarsus. Males with an internal subgular vocal sac. South Africa.

Pyxicephalus, sp., *Tschudi, Batr.* p. 83; *Dum. & Bibr.* viii. p. 442.
Tomopterna, *Bibron, Mus. Paris.*

1. Tomopterna adspersa.

Pyxicephalus adspersus, (*Bibr.*) *Tschudi, Batr.* p. 84; *Dum. & Bibr.* p. 444; *Smith, Ill. of S. Africa, Rept.* pl. 49.

Lower jaw with two large, bony, tooth-like prominences in front; legs as long as body; skin of the back with longitudinal folds. Olive, very finely white-spotted, with a white vertebral line.

a. Very large specimen. Stuffed. Africa.
b. Very large specimen. Stuffed. Africa.

2. Tomopterna delalandii.

Pyxicephalus delalandii, (*Bibr.*) *Tschudi, l. c.*; *Dum. & Bibr.* p. 445. pl. 87. f. 1; *Smith, l. c.* pl. 23.

Lower jaw with two very weak bony prominences; legs as long as body; skin of the back with smooth rounded warts. Olive, darker marbled, with one, sometimes with three white dorsal streaks.

a. Adult. South Africa. Presented by A. Smith, M.D.
b. Adult. South Africa.

3. Tomopterna marmorata.

Pyxicephalus marmoratus, *Peters in Wiegm. Archiv*, 1855, p. 56.

Legs longer than body; snout obtuse; tympanum small; brownish green, obscurely marbled with brown.
Boror; Mozambique.

Rana subsigillata, *A. Duméril in Guérin-Méneville's Revue et Mag. de Zool.* 1856, p. 560, appears to belong to this genus.—*Hab.* Gaboon.

4. RANA.

Habit generally moderate; fingers quite free; toes more or less webbed, generally with broad web; skin smooth, or with cutaneous or glandular folds, sometimes with flat, in one species with rough tubercles; never a large, paratoid-like gland; vomerine teeth in two series or groups. Tongue large, oblong, free, and deeply notched behind. Tympanum generally distinct. Metatarsus with one or two blunt tubercles. Males with two lateral vocal sacs, exceptionally wanting. Cosmopolitan.

Rana, *auctorum.*
Rana et Strongylopus, *Tschudi, Batr.* p. 78, 79.

1. Rana kuhlii.

Rana kuhlii, *Schleg. Mus. Lugd. Batav.*; *Dum. & Bibr.* p. 384.

Muzzle short; tympanum indistinct; skin with longitudinal or transverse plaits; toes with slightly swollen tips, broadly webbed; metatarsus with only one tubercle; vomerine teeth small, in two oblique series, convergent behind; lower jaw with two very prominent, pointed, fang-like apophyses in front. A yellowish cross band between the eyes.

A. With longitudinal plaits.

a. Half-grown. Java. From the Leyden Museum.

B. With transverse plaits.

b. Adult. Ceylon. From Mr. Cuming's Collection.
c. Young. Ceylon. From Mr. Cuming's Collection.
d. Half-grown. Ningpo. From Mr. Cuming's Collection.

C. Upper parts with small warts, each with a horny spine. Perhaps a species.

e. Large female. Ningpo. From Mr. Cuming's Collection.—This specimen exhibits only two blunt prominences in the lower jaw; but the form of all the parts is the same as in the other specimens; there is also a lighter indistinct cross band between the eyes, and this difference may prove to be only a difference of sex or of age.

2. Rana macrodon.

Rana macrodon, *Kuhl, Mus. Lugd. Bat.*; *Tschudi, Batr.* p. 80 (but not p. 40); *Dum. & Bibr.* p. 382.

Tympanum distinct, small; skin smooth, with a plait above the tympanum, no plaits on the occiput; upper eyelid tubercular; fourth toe one-third longer than the fifth; toes with slightly swollen tips, broadly webbed; metatarsus with only one tubercle. Crown of head one-half broader than upper eyelid. Vomerine teeth in two oblique series, convergent behind; lower jaw with two very prominent,

pointed, fang-like apophyses in front, less conspicuous in the females and younger individuals. East Indian Islands.

a. Adult male. Philippines. From Mr. Cuming's Collection.
b. Adult female. Philippines.
c, *d*. Young. Philippines. From Mr. Cuming's Collection.
e. Half-grown. Philippines.—This specimen exhibits longitudinal folds and a whitish vertebral line, and is not without doubt referred to the above species.

3. Rana vittigera.

Wiegmann, Nova Acta, 1835, p. 225. t. 21. f. 1.

Tympanum moderate; skin with short longitudinal folds; fourth toe one-third longer than the fifth; toes with slightly swollen tips, half-webbed; metatarsus with two tubercles; vomerine teeth in two oblique series, convergent behind; apophyses of lower jaw hardly conspicuous.

This species, confounded by Bibron with *R. tigrina*, is a distinctly different species, not even growing to the size of *R. temporaria*. In habit and in coloration it is similar to *R. tigrina*; it is greyish brown above, with darker irregular spots; a triangular spot between the eyes, generally divided into two by a white vertebral line, running from the muzzle to the anus. The narrow whitish longitudinal line on the hinder side of the calf of the leg is often wanting.

a. Adult. Ningpo. From Mr. Cuming's Collection.
b. Adult female. Ningpo. From Mr. Cuming's Collection.
c. Half-grown. Ningpo. From Mr. Cuming's Collection.
d. Young. Ningpo. From Mr. Cuming's Collection.
e-h. Adult and young. Hong Kong. Presented by J. C. Bowring, Esq.
i. Adult female. Loochoo. Presented by A. Collie, Esq.
k, *l*. Adult and half-grown. China. Presented by J. C. Bowring, Esq.
m. Several specimens. China. Presented by J. Reeve, Esq.
n. Several specimens. China. Presented by J. Reeve, Esq.
o-q. Adult and half-grown. China. From Mr. Cuming's Collection.
r. Half-grown: not good state. China.
s. Half-grown. China. From Mr. Cuming's Collection.
t. Several specimens. Ceylon. From Mr. Cuming's Collection.
u-x. Half-grown and young. Ceylon. From Mr. Cuming's Collection.
y. Many specimens. Madras. Presented by J. C. Jerdon, Esq.
z. Adult. Java. From M. Parzudaki's Collection.
α-γ. Adult. East Indies. Presented by the East India Company.
δ. Skeleton of an adult. China. Presented by J. Reeve, Esq.

4. Rana tigrina.

Rana tigrina, *Daud. Rain.* p. 64. pl. 20, and *Rept.* viii. p. 125; *Merr. Tent.* p. 174; *Cuv. Règne Anim.*; *Dum. & Bibr.* p. 375; *Kelaart, Prodr. Faun. Ceylon.* p. 192.

Rana cancrivora, (*Boie*) *Gravenh. Delic.* p. 41; *Tschudi, Batr.* p. 79.
—— picta, *Gravenh. l. c.* p. 39.
—— brama, *Less. Voy. Ind. Orient. Bel. Rept.* p. 329. pl. 6 (male).

Tympanum moderate; skin with short longitudinal folds; fourth toe one-third or one-half longer than the fifth; toes with slightly swollen tips, broadly webbed; metatarsus with only one tubercle. Vomerine teeth in two oblique series, convergent behind; lower jaw with two rather prominent but blunt apophyses in front.

a. Adult. Borneo. From the Leyden Museum.
b, *c*. Adult and half-grown. Borneo.
d. Half-grown. Philippine Islands.
e. Half-grown. Philippine Islands.
f. Half-grown. Philippine Islands.
g, *h*. Adult and half-grown. China.
i. Half-grown: not good state. China.
k. Half-grown. Ningpo. From Mr. Cuming's Collection.
l. Young: bad state. Hong Kong. Presented by J. C. Bowring, Esq.
m. Adult: skin. Bengal.
n. Adult. Nepal. Presented by B. H. Hodgson, Esq.
o, *p*. Young: bad state. Singapore.
q, *r*. Large female. Madras. Presented by J. C. Jerdon, Esq.
s. Adult. Madras. Presented by J. C. Jerdon, Esq.
t. Young. Nilgherries.
u. Adult. Ceylon. From Mr. Cuming's Collection.
v. Adult. Ceylon. From Mr. Cuming's Collection.
w. Half-grown. Ceylon. From Mr. Cuming's Collection.
x. Young. Ceylon. From Mr. Cuming's Collection.
y. Large male. India.
z. Half-grown: very bad state. India.
α. Adult male: stuffed. India. Presented by Major Sykes.
β. Adult female: stuffed. India. Presented by Major Sykes.
γ. Adult. —— ?
δ-*η*. Adult. East Indies. Presented by the East India Company.
ζ. Adult: skeleton. East Indies. From M. Braconier's Collection.

5. Rana grunniens.

Rana grunniens, *Daud. Rain.* p. 65. pl. 21, and *Rept.* viii. p. 127; *Merr. Tent.* p. 174; *Dum. & Bibr.* p. 380.
—— subsaltans, *Gravenh. Delic.* p. 35. t. 7.
—— hydromedusa, (*Kuhl*) *Tschudi, Batr.* p. 80.

Tympanum small, half the width of upper eyelid; skin smooth, with very small plaits above the tympanum and on the occiput; upper eyelid tubercular; fourth toe one-third longer than the fifth; toes with slightly swollen tips, broadly webbed; metatarsus with only one tubercle. Crown as broad as upper eyelid. Vomerine teeth in two oblique series, convergent behind; lower jaw with two rather prominent but blunt apophyses in front. East Indies.

a. Adult: skeleton. Java.

6. Rana hexadactyla.

Rana hexadactyla, *Less. Voy. Ind. Orient. Bel. Zool. Rept.* vi. p. 331; *Tschudi*, p. 80.
Dactylethra bengalensis, *Less. Ill. Zool.* pl. 47.
Rana cutipora, *Dum. & Bibr.* p. 339.

Body smooth, with rows of pores round the neck, sides and belly; toes and fingers pointed; toes entirely webbed, fourth not very much longer than third and fifth; vomerine teeth in two oblique series, convergent behind; above brown, sometimes with a lighter vertebral line; beneath whitish, sometimes variegated with brownish.

a. Adult. Ceylon. From Mr. Cuming's Collection.
b. Adult. Ceylon. From Mr. Cuming's Collection.
c. Adult. Ceylon. From Mr. Cuming's Collection.
d. Half-grown. Ceylon. From Mr. Cuming's Collection.
e. Half-grown. Ceylon. From Mr. Cuming's Collection. Specimens, native of Ceylon, do not appear to grow to the same size as those coming from other parts of the East Indies.
f, *g*. Large specimens. Madras. Presented by J. C. Jerdon, Esq.
h. Young. China. Presented by J. R. Reeve, Esq.
i. Young (tailed). Celebes.
k. Adult: stuffed. India. From Mr. Warwick's Collection.

7. Rana leschenaultii.

Dum. & Bibr. p. 342; *Cantor, Catal. Malay. Rept.* p. 138.

Body with small tubercles and warts, and rows of pores round the neck, sides and belly; toes and fingers pointed; toes entirely webbed, fourth not very much longer than third and fifth. East Indian Continent.

a. Adult. ——?

8. Rana rugosa.

Rana rugosa, *Schleg. Faun. Japon. Rept.* t. 3. f. 3, 4; *Tschudi, Batr.* p. 79; *Dum. & Bibr.* p. 368.

Upper parts covered with very prominent irregular tubercles; fingers and toes with large subarticular tubercles; toes webbed nearly to the end, fourth one-third longer than fifth; metatarsus with two tubercles; tympanum moderate; vomerine teeth in two oblique series. Crown broad; upper eyelid rough with tubercles.

a, *b*. Adult. Japan. From the Leyden Museum.

9. Rana malabarica.

Rana malabarica, *Dum. & Bibr.* p. 365; *Tschudi, Batr.* p. 80; *Kelaart, Prodr. Faun. Ceylon.* p. 191.

Body smooth, with a feeble cutaneous fold on each side of the

back; fingers and toes blunt at the tips, with large subarticular tubercles; toes shortly webbed, the fourth half as long as the third and fifth; metatarsus with two, metacarpus with three tubercles; vomerine teeth in two oblique series, convergent behind. Above, between the folds, reddish brown, sides of head and body black, white-spotted behind; upper lip white-edged. Malabar.

a. Adult. Ceylon. From Mr. Cuming's Collection.
b. Adult. Ceylon. From Mr. Cuming's Collection.
c. Adult. Ceylon. From Mr. Cuming's Collection.
d, *e*. Adult and half-grown. Ceylon. From Mr. Cuming's Collection.
f. Half-grown. Ceylon. From Mr. Cuming's Collection.
g. Half-grown. Ceylon. From Mr. Cuming's Collection.
h. Adult. India. Presented by Sir J. Richardson.

10. Rana esculenta.

Gesner, Hist. Anim. xi. p. 41; *Rondelet, Aquat. Hist. Lib. de Palustr.* p. 217; *Schwenckfeld, Theriotroph. Siles.* p. 157; *Aldrov. Quadr. Digit. Ovip.* p. 591; *Ray, Synops. Meth.* p. 247; *Klein, Quadr. Dispos.* p. 117; *Rösel, Hist. Ran.* p. 53. t. 13–16.

Rana viridis, *Linn. Faun. Suec.* p. 94; *Shaw, Zool.* iii. p. 103. pl. 31; *Dum. & Bibr.* p. 343.

—— esculenta, *Linn. Syst. Nat.* i. p. 357; *Laur. Syn.* p. 31; *Müller, Zool. Dan. Prodr.* p. 35; *Daubent. Dict. Anim.* p. 650; *Bonnat. Erpétol.* p. 3; *Lacép. Quadr. Ovip.* i. p. 505; *Meyer, Synops. Rept.* p. 12; *Sturm, Deutschl. Fauna,* iii. Heft 1; *Donndorf, Zool. Beitr.* iii. p. 55; *Latr. Salam.* p. 38, and *Rept.* ii. p. 148; *Daud. Rain.* p. 46. pl. 15. f. 1, and *Rept.* viii. p. 90; *Descript. de l'Eg. Suppl.* pl. 2. f. 11, 12; *Cuv. Règne Animal*; *Merr. Tent.* p. 176; *Griffith, Anim. Kingd.* ix. p. 392; *Eichw. Zool. Spec.* iii. p. 166; *Wagl. Syst.* p. 203; *Bonap. Faun. Ital.*; *Holandre, Faune de la Moselle,* p. 220; *Schinz, Faun. Helvet.* p. 143; *Schleg. Faun. Japon.* vii. t. 3. f. 1; *Tschudi, Batr.* p. 79.

—— ridibunda, *Pallas, Iter.*
—— cachinnans, (*Pall.*) *Eichw. Faun. Caspio-Caucas.* p. 126. pl. 30.
—— palmipes, *Spix, Test.* t. 5. f. 1.
—— maritima, *Risso, Hist. Nat. Europ. Mér.* iii. p. 92; *Bonap. l. c.*
—— alpina, *Risso, l. c.* p. 93; *Bonap. l. c.*
—— calcarata, *Michahelles, Isis,* 1830, p. 160; *Tschudi,* p. 80.
—— tigrina, *Eichw. Faun. Caspio-Caucas.* p. 125.
—— hispanica, *Bonap. l. c.*

Body with a glandular fold on each side; toes not quite webbed to the end; metatarsus with two tubercles; vomerine teeth in two small groups between the inner nostrils. Male with an external vocal sac on each side, behind the angle of mouth; *openings of the vocal sacs moderate.*

A. *African specimens.*

a, *b*. Adult. Tunis. From Mr. Fraser's Collection.
c. Young. North Africa. From Mr. Fraser's Collection.

B. *European specimens.*

d. Adult. South Europe. Presented by R. B. Webb, Esq.
e, f. Adult. South Europe. Presented by R. B. Webb, Esq.
g. Adult: skin. Italy.
h, i. Adult. Bononia. Presented by J. J. Bianconi.
k-n. Young and larvæ. Bononia. Presented by J. J. Bianconi.
o, p. Adult. Turin. Presented by Prof. Bonelli.
q. Large female. Hungary. As *Pelophylax ridibundus*.
r, s. Adult and young: not good state. North Germany.
t. Half-grown. Hanover. Presented by Dr. J. E. Gray.
u-w. Adult and half-grown. Cambridgeshire.
x-z. Adult and half-grown. Cambridgeshire. Presented by W. Yarrell, Esq.
α. Large specimen. Europe. Presented by the Hon. A. Russell, as *Rana ridibunda*.
β. Large specimen. Europe.
γ. Large specimen: stuffed. Europe.
δ. Adult: skin. Europe.
ε. Young. Guezama. Presented by W. C. Trevelyan, Esq.
ζ. Adult: skeleton. Paris.
η. Adult: skeleton. Europe.

C. *Asiatic specimens.* Var. **japonica.**

θ. Adult. Euphrates Expedition.
ι. Adult. Chusan.
κ. Adult. Chusan.
λ-ξ. Half-grown. Chusan.
ο. Half-grown. Chusan. Presented by the East India Company.
π. Adult: bad state. China.
ρ. Adult. Ningpo. From Mr. Cuming's Collection.
σ. Adult. Ningpo. From Mr. Cuming's Collection.
τ. Half-grown. Ningpo. From Mr. Cuming's Collection.
υ. Half-grown. Ningpo. From Mr. Cuming's Collection.
φ. Half-grown. Ningpo. From Mr. Cuming's Collection.
χ. Half-grown. Ningpo. From Mr. Cuming's Collection.
ψ-aa. Adult. Japan. From the Leyden Museum.
bb, cc. Adult. Japan. From the Leyden Museum.

11. Rana halecina.

Catesby, Nat. Hist. Carol. i. pl. 70; *Bartram, Travels in Carol.* p. 278.
Rana halecina, *Kalm, Iter Amer.* iii. p. 46; *Daud. Rain.* p. 63, and *Rept.* viii. p. 122; *Merr. Tent.* p. 175; *Harl. Sillim. Journ.* x. p. 60, and *N. Amer. Rept. in Journ. Ac. Nat. Sc. Philad.* v. p. 337; *Tschudi, Batr.* p. 79; *Dum. & Bibr.* p. 351; *Holbr. N. Amer. Herpet.* iv. p. 91. t. 22; *Hallow. in Proc. Ac. Nat. Sc. Philad.* 1856, pp. 141, 250.
—— virginiana, *Laur. Syn. Rept.* p. 31.
—— pipiens, *Gm. Syst. Nat.* iii. p. 1052; *Bonnat. Erpét.* p. 5; *Donnd. Zool. Beitr.* iii. p. 51; *Schreb. Naturf.* xviii. p. 182. t. 4; *Shaw, Zool.* iii. p. 133; *Schneid. Hist. Amph.* p. 105. pl. 32.
—— palustris, *Guérin, Iconogr. Rept.* pl. 26. f. 1.

Body with a glandular fold on each side; toes not quite webbed to the end; metatarsus with one tubercle; vomerine teeth in two small groups between the inner nostrils. Above greenish, with rounded darker spots. Male with an internal vocal sac on each side, beneath the angle of mouth; *openings of the vocal sacs minute.*

a. Adult. Mexico. From M. Parzudaki's Collection.
b. Adult. Philadelphia. From Mr. Cuming's Collection.
c, *d*. Half-grown. Lake Winnipeg. Presented by Sir J. Richardson.
e. Half-grown. Lake Winnipeg. Presented by Sir J. Richardson.
f, *g*. Adult. North America. From Mr. Cuming's Collection.
h. Adult. North America. From Mr. Cuming's Collection.
i. Adult. North America. From Mr. Cuming's Collection.
k. Adult. North America. From Mr. Cuming's Collection.
l. Adult. North America. From Mr. Cuming's Collection.
m. Adult. North America. From Mr. Cuming's Collection.
n. Adult. North America. From Mr. Brandt's Collection.
o, *p*. Adult. North America.
q, *r*. Adult. North America. Presented by Edward Doubleday, Esq.
s. Adult. North America.
t. Adult: stuffed. North America. Purchased of Mr. Johnston.

12. Rana palustris.

Rana palustris, *Leconte*, *Ann. Lyc. New York*, i. p. 282; *Harl. Sillim. Journ.* x. p. 59, and *Journ. Ac. Nat. Sc. Philad.* v. p. 339; *Dum. & Bibr.* p. 356; *Holbr. N. Amer. Herpet.* iv. p. 95. pl. 23; *Hallow. Proc. Ac. Nat. Sc. Philad.* 1856, pp. 141, 250.

Body with two glandular folds on each side; toes not quite webbed to the end; metatarsus with one tubercle; vomerine teeth in two small groups between the inner nostrils. Above greenish, with a row of squarish darker spots between the glandular folds. *Male without vocal sac.* North America.

Hallowell (*l. c.*) mentions another species from the southern parts of North America, *Rana oxyrhynchus*; if it should prove to be a different species, the name must be altered, being preoccupied by an African species of Sundevall.

13. Rana clamata.

Rana clamata, *Daud. Rain.* p. 54. pl. 52. f. 2, and *Rept.* viii. p. 204; *Harl. in Sillim. Journ.* x. p. 63; *Dum. & Bibr.* p. 373.
—— clamitans, *Merr. Tent.* p. 175; *Holbr. N. Amer. Herpetol.* iv. p. 85. pl. 20.
—— fontinalis, *Leconte*, *Ann. Lyc. Nat. Hist. New York*, i. p. 282; *Holbr. l. c.* p. 87. pl. 21.
—— flavoviridis, *Harl. l. c.* and *Journ. Ac. Nat. Sc. Philad.* v. p. 338, and *Med. Phys. Res.* p. 103.

Tympanum very large; on each side of back a glandular fold; toes broadly webbed, fourth one-third longer than the third and fifth;

metatarsus with one tubercle; vomerine teeth in two small groups between the inner nostrils.

a. Adult: fine specimen. New York. As Rana magna.
b. Adult. Philadelphia. From Mr. Cuming's Collection (*Rana fontinalis*).
c. Half-grown. Georgia. From Mr. Cuming's Collection.
d, *e*. Adult. North America.
f. Adult. North America.
g. Adult. North America.
h. Adult: skeleton. United States.

14. Rana mugiens.

Bull-frog, *Cat. Nat. Hist. Carol.* ii. p. . t. 72; *Daubent. Dict. Anim. Quadr. Ovip.* p. 655; *Lacép. Quadr. Ovip.* i. 541; *Bonnat. Ophiol.* p. 7.
Rana catesbiana, *Shaw, Zool.* iii. p. 106.
—— mugiens, *Merr. Tent.* p. 175; *Wagl. Syst.* p. 203; *Tschudi, Batr.* p. 79; *Dum. & Bibr.* p. 370.
—— pipiens, *Harl. in Sillim. Journ.* x. p. 62, and *Journ. Ac. Nat. Sc. Philad.* v. p. 335; *Cuv. Règne Anim.*; *Holbr. N. Amer. Herpetol.* iv. p. 77. pl. 18.

Tympanum very large; skin smooth, without glandular folds; toes broadly webbed, fourth one-fourth longer than third and fifth; metatarsus with one tubercle; vomerine teeth in two groups between the inner nostrils.

a. Large specimen: bleached. North America. Old Collection.
b. Large specimen. North America. Purchased of Mr. Jamrach.
c. Large specimen. North America.
d. Adult. North America.
e, *f*. Adult: bad state. North America.
g, *h*. Adult: stuffed. Delaware. Presented by Edward Doubleday, Esq.
i. Adult: skin. North America. Purchased of Mr. Thomas.
k. Adult: skeleton. America. Presented by the Zoological Society.

15. Rana lecontii.

Rana lecontii, *Baird & Girard, Proc. Ac. Nat. Sc. Philad.* 1853, p. 301.

Snout moderately pointed; tongue elongate; tympanum half the width of the eye; skin quite smooth, on each side a glandular fold. Above dark olive, with rather large, circular black spots, lighter in the centre; a whitish line from just below the eye to the shoulder; a black spot at the base of the arm in front. Metatarsus with one tubercle; vomerine teeth in two small groups between the inner nostrils. San Francisco.

a, *b*. Half-grown. Mexico. From M. Sallé's Collection.
c. Half-grown. Mexico. From M. Sallé's Collection.

d. Half-grown: not good state. Mexico. From M. Sallé's Collection. Belly black-spotted.
e, *f*. Half-grown. Vera Cruz. From Mr. Cuming's Collection.

16. Rana temporaria.

Gesner, Hist. Anim. ii. p. 58; *Aldrov. Quadr. Digit. Ovip.* ii. p. 610; *Linn. Faun. Suec.* i. p. 250; *Rösel, Hist. Ran.* p. 1. t. 1–8.
Rana temporaria, *Linn. Syst. Nat.* i. p. 357; *Müller, Zool. Dan. Prodr.* p. 35; *Fabr. Faun. Grœnl.* p. 124; *Bonnat. Erpét.* p. 3; *Lacép. Quadr. Ovip.* i. p. 528; *Meyer, Syn. Rept.* p. 12; *Sturm, Deutschl. Fauna*, iii. Heft 1; *Donnd. Zool. Beitr.* iii. p. 52; *Schneid. Hist. Amph.* p. 113; *Latr. Salam.* p. 37, and *Rept.* ii. p. 150; *Shaw, Zool.* iii. p. 97. pl. 29; *Daud. Rain.* p. 16. pl. 15. f. 2, and *Rept.* viii. p. 94; *Merr. Tent.* p. 175; *Pennant, Brit. Zool.* iii. p. 9; *Risso, Hist. Nat. Eur. Mérid.* iii. p. 93; *Cuv. Règne Anim.*; *Wagl. Syst.* p. 203; *Jenyns, Brit. Vertebr.* p. 300; *Bonap. Faun. Ital.*; *Schinz, Faun. Helv.* p. 143; *Schleg. Faun. Japon.* pl. 3. f. 2; *Tschudi, Batr.* p. 79; *Bell, Brit. Rept.* p. 84; *Eichw. Faun. Caspio-Caucas.* p. 124; *Dum. & Bibr.* p. 358.
Rana muta, *Laur. Syn. Rept.* p. 30.
—— scotica, *Bell, l. c.* p. 102.

A. *European specimens.*

* **Rana oxyrhinus,** *Steenstrup, Amtl. Bericht über die* xxiv. *Versammlung deutsch. Naturf. Kiel*, 1846, p. 131.—Muzzle pointed; first cuneiform prominent.

a. Adult. Hanover. Presented by Dr. J. E. Gray.
b, *c*. Adult and young. North Germany. Presented by Dr. J. E. Gray.
d. Adult. Germany.

** **Rana platyrhinus,** *Steenstrup, l. c.*—Muzzle short, blunt; first cuneiform bone hardly prominent, covered with a thick membrane and forming a blunt tubercle.

e. Adult. Hanover. Presented by Dr. J. E. Gray.
f-h. Adult. Hanover. Presented by Dr. J. E. Gray.
i. Adult. Hanover. Presented by Dr. J. E. Gray.
k. Adult. Exeter. Mus. Leach.
l, *m*. Adult and half-grown. Surrey. Mus. Leach.
n-p. Adult. England. Presented by the Zoological Society.
q-s. Adult. England.
t-v. Adult. Braid Hill. Presented by Prof. Bell.
w. Many specimens. Scotland.
x. Adult: skeleton. England.
y. Adult: skeleton. England.
z. Adult: skeleton. Scotland.

*** **Rana arvalis,** *Nilsson, Scandinavisk Fauna*, iii. p. 92.—Muzzle moderate; first cuneiform bone prominent.

a. Adult. Sweden. Presented by Prof. Sundevall.

β-δ. Adult and half-grown. Sweden. Presented by Prof. Sundevall.

ε, ζ. Adult. Bononia. Presented by J. J. Bianconi. In one of the specimens the tubercle on the metatarsus is blunt, as in *platyrhinus*.

B. *Asiatic specimens.*

Rana temporaria, var. japonica, *Schlegel, l. c.*

η. Half-grown. Ningpo. From Mr. Cuming's Collection.

θ, ι. Young: bad state. Chusan. Presented by the East India Company.

κ, λ. Young: bad state. Chusan.

μ-ξ. Adult. Japan. From the Leyden Museum.

C. *American specimens.*

Rana silvatica, *Leconte, Ann. Lyc. Nat. Hist. New York*, i. p. 282; *Harlan, in Sillim. Journ.* xiv. p. 58, and in *Journ. Ac. Nat. Sc. Philad.* v. 338; *Tschudi, Batr.* p. 79; *Dum. & Bibr.* p. 362; *Holbr. N. Amer. Herpetol.* iv. pl. 24. Rana pennsylvanica, *Harl. l. c.* p. 60.—Tympanum generally, but not always, rather larger than in the European specimens.

o. Adult. North America.

π-s. Adult and half-grown. North America. Presented by Edward Doubleday, Esq.

τ, υ. Half-grown: bad state. North America. Presented by Dr. J. Green.

φ, ψ. Adult. Woods near Chekham.

ω. Some half-grown and young specimens. Great Bear Lake. Presented by Sir J. Richardson.

aa-dd. Adult and young. North America. From Dr. Gardiner's Collection.

ee-gg. Adult. North America.

17. **Rana superciliaris.** (Plate I. fig. B.)

Snout much elongate, very acute; inner nostrils small, much nearer the interior prominence of the eye than the tip of the snout; tympanum nearly as large as the eye; skin with long, strong longitudinal folds; upper eyelid with a small fold in front and another deep one behind, the latter forming a free hinder edge. Toes not webbed to the end, fourth one-third longer than the third; metatarsus with only one small tubercle. Vomerine teeth in two short series, situated near the front edge of the inner nostril.

a. Adult male. Sierra Leone. Two lateral exterior vocal sacs. Length of cleft of mouth $\frac{3}{4}''$; length from the angle of mouth to anus $1''$; length of hinder leg $3\frac{1}{4}''$.

18. Rana bibronii.

Hallowell, Proc. Ac. Nat. Sc. Philad. 1845, p. 249.

Head longer than broad; muzzle rather elongate and pointed; tympanum two-thirds the width of eye; skin of the back with narrow longitudinal folds. Legs and toes slender, half-webbed; fourth toe one-third longer than fifth; metatarsus with one tubercle. Vomerine teeth small, in two rather oblique series, beginning from near the front edge of the inner nostrils.

A whitish longitudinal band from the snout to anus; above with dark spots; sides of head brown; a white band from just below the eye to the shoulder; beneath uniform whitish.

a. Half-grown. Gaboon. From Mr. Cuming's Collection.

19. Rana grayi.

Smith, Illustr. of the Zool. of S. Afr. pl. 78. f. 2.

Head nearly as long as broad, with moderate, rounded muzzle; tympanum circular, half the width of eye; skin of the back and sides with broad longitudinal folds, and flat tubercles between. Toes rather elongate, webbed only at the base; fourth toe one-third longer than fifth; metatarsus with one, rather prominent tubercle. Vomerine teeth in two, rather oblique series, situated near the front edge of the inner nostrils.

Brownish yellow, brown variegated with large brown spots above; temple brown; beneath straw-yellow.

a-c. Adult and half-grown: discoloured. South Africa.

20. Rana mascareniensis.

Dum. & Bibr. p. 350; *Bell, Zool. of the Beagle, Rept.* p. 32. pl. 16. f. 2.

Body with six or eight longitudinal folds; toes and fingers slender, with blunt tip and moderate subarticular tubercles; toes not webbed to the end, fourth one-third longer than fifth and third; metatarsus with one tubercle. Vomerine teeth in two oblique series. Tympanum distinct, of moderate size. Greyish or brown above, sometimes black-spotted, with or without paler vertebral band. On each side of the tongue a slit for the vocal sac.

a. Adult: bad state. Isle de France. Presented by Charles Darwin, Esq.

21. Rana fuscigula.

Dum. & Bibr. p. 386; *Smith, Ill. of S. Afr. App.* p. 22.

Head as long as broad; muzzle rather short, rounded; tympanum distinct, moderate; skin of back with irregular longitudinal plaits; toes of moderate length, webbed to the tip, but deeply notched; fourth

toe one-third longer than fifth; metatarsus with only one tubercle; vomerine teeth in two groups between the internal nostrils.

a. Large specimen. Cape of Good Hope. Presented by the Earl of Derby.
b. Adult male. Cape of Good Hope. From Mr. Cuming's Collection.
c. Adult. Cape of Good Hope. From Mr. Cuming's Collection.
d. Adult. Cape of Good Hope. From Mr. Frank's Collection.
e. Adult. Cape of Good Hope.
f. Large specimen: discoloured. South Africa.
g. Adult. South Africa. Presented by A. Smith, M.D.
h. Adult. West Africa. From Mr. Fraser's Collection.

22. Rana oxyrhynchus.

Sundevall; *Smith, Ill. of the Zool. of S. Afr. Rept.* pl. 77. f. 2.

Head longer than broad; muzzle much elongate, pointed; tympanum distinct, moderate; on each side of back a glandular fold; toes of moderate length, broadly webbed; fourth toe one-third longer than fifth; metatarsus with only one tubercle; vomerine teeth in two straight series between the inner nostrils.

a. Adult. Cape of Good Hope. From M. Parzudaki's Collection.

23. Rana galamensis.

Dum. & Bibr. p. 367.

Skin smooth, with a broad glandular enlargement on each side; fingers and toes with moderate subarticular tubercles; toes very shortly webbed, fourth half as long as third and fifth; metatarsus with one tubercle; tongue not very deeply nicked behind; vomerine teeth in two oblique series. Galam (Senegal).

24. Rana delalandii.

Dum. & Bibr. Erpétol. Génér. p. 388; *Smith, l. c.* pl. 77. f. 1.—Not *Bell, Zool. of the Beagle.*

Head not much longer than broad; muzzle moderate; tympanum distinct, rather large; skin of back with longitudinal plaits; hinder legs slender; fingers and toes much elongate, very slender; toes half-webbed; metatarsus with only one tubercle; vomerine teeth in two small roundish groups between the inner nostrils.

Bibron describes the vomerine teeth as "disposées sur deux rangs légèrement obliques et contigu chacun de son côté à l'extrémité interne du bord antérieur des narines." Our specimens, one of which is named by Dr. A. Smith, agree in all the other characters with the original description of Bibron, only exhibiting the vomerine teeth arranged as above described.

a. Adult. Cape of Good Hope. From M. Parzudaki's Collection.
b. Adult. South Africa. Presented by Dr. A. Smith.
c. Half-grown. South Africa. Presented by Charles Darwin, Esq.
d-f. Adult: bad state. Africa. Presented by Dr. Stanger.
g. Adult. Africa. From Mr. Frank's Collection as Rana fuscigula.
h. Half-grown. Africa. From Mr. Frank's Collection as *Rana gracilis**.

25. Rana fasciata.

Rana fasciata, *Boie, Mus. Lugd. Bat.*; *Dum. & Bibr.* p. 389; *Smith, l. c.* pl. 78. f. 1.
Strongylopus fasciatus, *Tschudi, Batr.* p. 79.
Rana delalandii, *Bell, Zool. Beagle, Rept.* p. 31. pl. 16. f. 1.

Head longer than broad; muzzle pointed; tympanum distinct, rather small; skin nearly smooth; hinder legs very slender; fingers and toes much elongate, very slender; toes only webbed at the base; vomerine teeth in a straight line, interrupted in the middle, situated between the front edge of the inner nostrils.

a. Adult. South Africa. Presented by A. Smith, M.D.
b. Adult: not good state. South Africa. Presented by Charles Darwin, Esq. Original specimen of Prof. Bell's description and figure.

5. SPHÆROTHECA.

Habit similar to *Pelobates*; head thick, with short, rounded muzzle and swollen, spherical occiput†; extremities short, fingers free; toes five, half-webbed; first cuneiform bone with a flat, oval, sharp-edged spur. Skin smooth, with indistinct scattered tubercles. Vomerine teeth in two oblique series. Tongue cordiform, free and deeply nicked behind; eustachian tubes moderate; tympanum distinct. Sacral vertebra not dilated. Male with an external vocal sac. East Indies.

1. Sphærotheca strigata. (Plate II. fig. A.)

Yellowish brown, with dark brown spots and a yellow band from the muzzle to anus.

a. Many specimens. Madras. Presented by J. C. Jerdon, Esq.
b. Skeleton: male. Madras. Presented by J. C. Jerdon, Esq.

Description.—In habit similar to *Pelobates*; head thick, rounded, with short rounded muzzle and much-swollen occiput; extremities short; fingers quite free, each with one or two very prominent tubercles at the palmar surface; metacarpus with a larger, oval, outer tubercle and with a smaller inner one; toes five, of moderate length,

* In the printed, but not published, 'Nomenclator Reptilium Musæi Zoolog. Berol.,' I find the name of *Rana gracilis*, Schlegel, from the Gold Coast. Whatever the characters of this species may be, the above specimen belongs to *R. delalandii*.

† σφαῖρα sphæra, and θήκη cranium.

half-webbed, with indistinct tubercles; first cuneiform bone with a flat, oval, sharp-edged spur. Skin smooth, with some small, indistinct tubercles; head above covered with moveable, smooth skin. Nostril near the muzzle, very near the canthus rostralis; cleft of mouth moderate; tongue cordiform, free and deeply notched behind; in the males on each side of the tongue a cleft for the vocal sac; vocal sac external, formed by two lateral bladders communicating in the middle. Inner nares and eustachian tubes moderate; tympanum rounded, distinct. Vomerine teeth in two oblique series, convergent behind, but with an interspace between. Above yellowish brown, with a yellow dorsal band extending from the snout to the anus; upper parts with dark brown, sometimes confluent spots; crown with two oblique brown streaks beginning on the upper eyelid, convergent towards behind, and separated by the yellow band; a brown streak from the eye along the canthus rostralis; beneath nearly uniform white; throat and vocal sacs brown. Size of *Pelobates fuscus*.

6. CALYPTOCEPHALUS.

Habit toad-like; head covered with a rugose shield; extremities short. Vomerine teeth forming an interrupted cross series between the internal nostrils; tongue oval, entire and free behind. Eustachian tubes rather large; tympanum distinct. Fingers free; toes half-webbed; a large blunt tubercle at the metacarpus. Male with a vocal sac on each side of the throat. Chili.

Calyptocephalus, *Bibr. Mus. Paris*; *Dum. & Bibr.* viii. p. 447.
Peltocephalus, *Tschudi, Batr.* p. 81.

1. Calyptocephalus gayi.

Calyptocephalus gayi, *Bibr. Mus. Paris*; *Dum. & Bibr.* p. 450.
Peltocephalus quoyi, *Tschudi, l. c.*

Above olive, varied with darker.

a. Adult: skeleton. Chili. From M. Braconier's Collection.

7. CYCLORHAMPHUS.

Habit moderate; head short, flat, rounded in front. Fingers free; toes half-webbed, the first cuneiform bone forming a small rounded prominence. Skin quite smooth. Vomerine teeth in two small groups; tongue entire and free behind, oval; eustachian tubes small, tympanum hidden. Male without vocal sac. Chili.

Cycloramphus, sp., *Tschudi, Batr.* p. 81; *Dum. & Bibr.* viii. p. 452.

1. Cyclorhamphus marmoratus.

Cycloramphus marmoratus, *Dum. & Bibr.* p. 455; *Tschudi, in Wiegm. Arch.* 1845, p. 167.

Brownish, marbled with black, often with small white spots.

a. Larvæ. Guascona. Presented by J. B. Pentland, Esq.
b. Several specimens not in a good state. Guascona. Presented by J. B. Pentland, Esq.

8. PITHECOPSIS.

Habit moderate; head short, flat, rounded in front. Fingers free; toes webbed, the first cuneiform bone forming a slight, rounded prominence. Skin smooth, with a large gland on each side. Vomerine teeth in two oblique series; tongue entire and free behind, oval; eustachian tubes moderate, tympanum hidden. Male with an internal subgular vocal sac. Brazil.

Cycloramphus, sp., *Tschudi, Batr.* p. 81; *Dum. & Bibr.* viii. p. 452.
Pithecopsis, *Bibr. Mus. Par.*

1. Pithecopsis fuliginosus.

Pithecopsis fuliginosus, *Bibr. Mus. Par.*
Cycloramphus fuliginosus, *Tschudi, l. c.*; *Dum. & Bibr.* p. 454.

Uniform brownish, beneath finely whitish spotted.

9. LEIUPERUS.

Habit as in *Bombinator*. Fingers completely free, toes webbed at the base; the first cuneiform bone prominent, tubercular. Tongue oval, free and entire behind. Vomerine teeth none; eustachian tubes very small; tympanum distinct. Skin granular. South America.

Leiuperus, *Dum. & Bibr.* viii. p. 420.

1. Leiuperus marmoratus.

Dum. & Bibr. p. 421; *D'Orb. Voy. Amér. Mérid.* t. 15. f. 1–4; *Tschudi, Faun. Per. Rept.* p. 168.

Dark olive, marbled with brown, sometimes with a whitish vertebral line. South America.

a. Half-grown. San Domingo.

2. Leiuperus salarius.

Leiuperus salarius, *Bell, Zool. of the Beagle, Rept.* p. 39. pl. 18. f. 1.

a. Bad state. Port Desire (Patagonia). Presented by Charles Darwin, Esq. The specimen is undoubtedly a half-grown *Pleurodema bufonium*: the form, the toes, even the lumbar gland (overlooked by Prof. Bell) are the same as in that species. But the condition of the specimen, the palate having been entirely destroyed, is not such as to allow me to give a decided opinion.

10. LIMNOCHARIS.

Tongue oval, entire, hinder edge free. Teeth ——? Nose truncated. Tympanum conspicuous, circular. Skin all smooth. Fingers free. Toes webbed at the base (*Bell*).

Bell describes the dentition thus: "Palatine teeth in two small groups, one in a line contiguous with the front margin of the inner nostrils, and a second at some distance behind them, close within the rise of the maxillary arch." As far as I can see, there were no palatine teeth at all; but if they are supposed to be lost, they must have been implanted in a series in front of the inner nostrils, much interrupted in the middle. The second series is merely imaginary, and nothing more than the sharp, quite smooth ridge of the os palatinum. The snout truncated, produced beyond the mouth; the maxillary arch is angularly bent, so as to form a straight front series of maxillary teeth. Otherwise the specimen is not in such a condition as to allow me to give my own diagnosis of this Batrachian.

Limnocharis, *Bell, Zool. of the Beagle, Rept.* p. 32.

1. Limnocharis fuscus.

Bell, l. c. p. 33. t. 16. f. 3.

Above dark brown; thighs lighter, obscurely banded with dark brown; beneath pale bluish grey; the throat dotted with brown.

a. Very bad state. Rio Janeiro. Presented by Charles Darwin, Esq.

11. HYLORHINA.

Habit stout; head short, thick, broad; extremities moderate; fingers very long, quite free; toes rather long, slightly webbed at the base, fringed; metatarsus with one blunt tubercle. Skin with small flat warts: no lumbar gland. Vomerine teeth in one straight, uninterrupted series. Tongue circular, free and entire behind; eustachian tubes moderate; tympanum not very distinct. Sacral vertebra not dilated. Chili.

Hylorhina, *Bell, Zool. of the Beagle, Rept.* p. 44.

1. Hylorhina silvatica.

Hylorhina sylvatica, *Bell, l. c.* pl. 19. f. 1.

Brown, beneath dirty whitish.

a. Adult female. Chiloë. Presented by Charles Darwin, Esq.

12. PYXICEPHALUS.

Head large and thick, muzzle very short, extremities rather short. Tongue large, rounded, free and hardly nicked behind. Vomerine teeth in one interrupted series. Eustachian tubes rather small; tympanum hidden. Neck with paratoid-like glands. Fingers free; toes half-webbed; a flat, sharp-edged spur at the metatarsus. Sacral vertebra not dilated. Tropical America.

Pyxicephalus, sp., *Tschudi, Batr.* p. 83; *Dum. & Bibr.* viii. p. 446.

1. Pyxicephalus americanus.

Dum. & Bibr. p. 446; *Bell, Zool. of the Beagle, Rept.* p. 40. pl. 18. f. 2.

On each side of the neck three large paratoid-like glands.

a, b. Adult. Brazil.
c. Young: bad state. Monte Video. Presented by Charles Darwin, Esq.

13. CERATOPHRYS.

Body stout, head very large, extremities short; cleft of mouth very large; edge of upper eyelid more or less produced into a point, so as to form a long horn or only a triangle. Skin with tubercles or cutaneous folds. Fingers free; toes more or less webbed; first cuneiform bone with a flat, oblong, rather sharp-edged tubercle. Tongue heart-shaped; palatine teeth in two groups; eustachian tubes moderate; tympanum more or less hidden. South America.

Ceratophrys, *Boie, in Wied's Beitr.* p. 569; *Wagl. Syst.* p. 203; *Cuv. Règne Anim.*; *Tschudi, Batr.* p. 82.
Phrynoceros, (*Bibr.*) *Tschudi, l. c.*
Hemiphractus, *Wagl. l. c.* p. 204.
Stombus, *Gravenh. Isis,* 1825, p. 952.
Bufo, sp., Rana, sp., *auct. prior.*

1. Ceratophrys cornuta.

Seba, i. 72. 1, 2; *Klein, Quadr. Dispos.* p. 120.
Rana cornuta, *L. Mus. Ad. Fried.* p. 48, and *Syst. Nat.* i. p. 356; *Donnd. Zool. Beitr.* iii. p. 47; *Schneid. Hist. Amph.* p. 125; *Shaw, Nat. Misc.* pl. 76; *Tilesius, Magazin der Gesellsch. Ntrf. Freunde in Berlin,* 1809, p. 92. t. 3, and *Krusenstern's Reise,* t. 6.
Bufo cornutus, *Laur. Syn.* p. 25; *Daub. Quadr. Ovip.* p. 603; *Lacép. Quadr. Ovip.* p. 604; *Bonnat. Erpét.* p. 16; *Shaw, Zool.* iii. p. 162. pls. 48, 49.
Ceratophrys dorsata, *Wied, Abbildg. tab.* and *Beiträge,* i. p. 577; *Wagl. Icon.* t. 22. f. 1, 2, and *Syst. Amph.* p. 204; *Tschudi, l. c.*; *Dum. & Bibr.* p. 431.
Stombus dorsatus, *Gravenh. Delic.* p. 49.
Ceratophrys varia et clypeata, *Cuv. Règne Anim.*
—— cornuta, *Schlegel, Abb.* t. 10. f. 1, 2.

Back with a bony dorsal shield; toes very slightly webbed at the base; tympanum distinct.

a. Large specimen. Brazil.—In the stomach I found a full-grown *Cystignathus fuscus*.
b. Adult. Brazil. Presented by Lord Stuart.
c. Very large specimen: skin. Brazil.

2. Ceratophrys boiei.

Ceratophrys boiei, *Wied, Beitr.* i. p. 592; *Dum. & Bibr.* p. 437.
Stombus cornutus, *Gravenh. Isis*, 1825, p. 952.
—— boiei, *Gravenh. Delic.* p. 50. t. 9. f. 1, 2.
Ceratophrys granosa, *Cuv. Règne Anim.*; *Guérin, Iconogr. Rept.* pl. 26. f. 2.

Back without bony shield; a transverse crest between the eyes; toes slightly webbed at the base; tympanum indistinct.

a. Adult male. Brazil.
b. Adult female. South America.
c, *d*. Adult. South America. Purchased of Mr. Argent.
e. Half-grown. South America.
f. Half-grown. South America.

3. Ceratophrys megastoma.

Bufo cornutus, *Daud. Rain.* p. 102. pl. 38, and *Rept.* viii. p. 214 (synon. wrong); *Latr. Rept.* ii. p. 117. f. 1.
Rana megastoma, *Spix, Test.* t. 24. f. 1.
Ceratophrys daudini, *Cuv. Règne Anim.*; *Dum. & Bibr.* p. 440.
Phrynoceros —— ?, *Tschudi, Batr.* p. 82.

Back without bony shield; no crest between the eyes; toes broadly webbed; tympanum distinct. South America.

4. Ceratophrys ornata.

Uperodon ornatum, *Bell, Zool. of the Beagle, Rept.* p. 50. pl. 20. f. 2.
Trigonophrys rugiceps, *Hallowell, Proc. Ac. Nat. Sc. Philad.* 1856, p. 298, and *Journ. Ac. Nat. Sc. Philad.* 1858, pl. 36.

Back with a bony dorsal shield; upper eyelid slightly pointed, triangular; toes half-webbed; tympanum indistinct.

a, *b*. Adult male and female. Buenos Ayres. Presented by Charles Darwin, Esq.—Original specimens of Bell's description and figure.
c. Adult female. Parana. From Mr. Cuming's Collection.
d. Large specimen: stuffed. South America. Presented by Lieut. Maud, R.N.

This species is so closely allied to *Ceratophrys cornutus*, that one can hardly understand how one naturalist could have placed it in a genus of Bufonidæ, and how another could have not only established a new

genus for it (as if it were a new and remarkable form), but likewise have overlooked the characteristic figure of it in a work so well known as the "Zoology of the Beagle." As for the vocal sac—which is wanting altogether according to Hallowell's examination—the internal subgular vocal sac is not only present, but the usual openings on each side of the tongue are so large (even in a rather small, of course male, individual) that a thick pencil may be introduced into them. I have but little doubt that Spix has already given a description of this animal, with a bad figure, as *Rana scutata*. Wagler afterwards formed it into his genus *Hemiphractus*.

14. HETEROGLOSSA.

Head nearly as long as the body, and about as long as broad; nine teeth in the lower jaw (?); no palatine teeth; eustachian tubes small; tongue suboval, deeply notched behind, attached by a cylindrical pedicel at the centre, entirely free in its posterior half, bound down anteriorly along the middle line by cellular tissue, reaching from the tip to the pedicel, free laterally except at the apex; fingers free; toes webbed at the base; tympanum distinct (*Hallowell*). Sacral vertebra?

Heteroglossa, *Hallowell, Proc. Ac. Philad.* 1857, p. 64.

1. Heteroglossa africana.

Hallowell, l. c.

Chocolate-brown above; abdomen ash-coloured. Gaboon.

Fam. 2. CYSTIGNATHIDÆ.

Ranina with free toes, cylindrical processes of sacral vertebra, and without paratoids.

Synopsis of the Genera.

1. **Cystignathus.** Vomerine teeth in two groups or in two oblique or curved series; never a large gland. Tropical America; Africa (Australia).
2. **Pleurodema.** A large gland on each loin. South America.
3. **Limnodynastes.** Vomerine teeth in a straight line; no large gland on the loin. Australia.

1. CYSTIGNATHUS.

Extremities moderate; fingers quite free; toes free, sometimes very slightly webbed or fringed. Skin smooth, or with cutaneous or

glandular folds; never a large paratoid-like gland. Vomerine teeth in two more or less oblique series or groups, never placed in a straight line. Tongue subcircular or oval, entire or slightly nicked behind. Tympanum distinct or hidden. Males either with a single subgular, or with two lateral vocal sacs, always with two slits at the sides of tongue. South America; Africa (Australia).

Crinia, *Tschudi, Batr.* p. 78.
Cystignathus, *Wagl. Syst. Amph.* p. 203; *Dum. & Bibr.* viii. p. 392; *Tschudi, Batr.* p. 78.
Rana, sp., *auct. prior.*

1. Cystignathus ocellatus.

Seba, i. 75. 1.
Rana ocellata, *L. Mus. Ad. Fried.* ii. p. 39, and *Syst. Nat.* i. p. 356; *Schneid. Hist. Amph.* p. 116; *Shaw, Zool.* iii. p. 108. pl. 34; *Daud. Rain.* p. 61. pl. 19, and *Rept.* viii. p. 118; *Merr. Tent.* p. 176; *Gravenh. Delic.* p. 42; *Cuv. Règne Anim.*
—— pentadactyla, *Laur. Syn. Rept.* p. 32.
—— mugiens, var., *Lacép. Quadr. Ovip.* i. p. 543; *Bonnat. Erpét.* p. 7.
—— rubella, *Daud. Rain.* p. 56. pl. 17. f. 1, and *Rept.* viii. p. 109; *Latr. Rept.* ii. p. 160.
—— gigas, *Spix, Test.* t. 1.
—— pachypus, *id.* t. 2. f. 1, 2. t. 3. f. 1; *Wied, Beiträge,* i. p. 540; *Gravenh. Delic.* p. 43.
—— mystacea, coriacea, pygmæa, *Spix, Test.* t. 3. f. 2, 3. t. 5. f. 2. t. 6. f. 2.
—— sibilatrix, *Wied, Beitr.* i. p. 545, and *Rec. Pl. Col.* pl. f. 2.
Cystignathus pachypus, *Wagl. Syst.* p. 203, and *Icon. Amph.* t. 21.
—— ocellatus, *Tschudi, Batr.* p. 78; *Dum. & Bibr.* p. 396. pl. 87. f. 4 (mouth).

Toes fringed on each side; metatarsus with one tubercle; tympanum distinct; vomerine teeth in two arches; skin smooth, in younger individuals with longitudinal folds.

a. Many specimens. Rio Janeiro. Presented by Charles Darwin, Esq.
b-d. Half-grown. Para. Presented by R. Graham, Esq.
e-g. Adult and half-grown. Brazil.
h, i. Adult. Brazil.
k. Adult. Brazil. From M. Parzudaki's Collection.
l. Adult: skin. Brazil. Presented by Mrs. Parker.
m. Half-grown. Brazil.
n. Adult male. Dominica. Mus. Guilding as *Rana delicatissima*.
o. Large specimen. Demerara. Presented by Col. E. Sabine.
p. Adult. South America. From Mr. Bates's Collection.
q, r. Adult. South America. From Mr. Brandt's Collection.
s. Large specimen: stuffed. South America.
t. Large specimen: stuffed. South America. From the Haslar Collection.
u. Large specimen: skin. South America.

v. Large specimen: skin. South America. From Mr. Stevens's Collection.
w. Young: not good state. South America.
x. Adult: skeleton. Brazil.
y. Adult: female. South America. From a specimen of the Old Collection.
z. Large specimen: skeleton. Brazil. From M. Braconier's Collection.

2. Cystignathus caliginosus.

Leptodactylus caliginosus, *Girard, Proc. Ac. Nat. Sc. Philad.* 1853, p. 422.

Toes fringed on each side; metatarsus with two tubercles; tympanum distinct; vomerine teeth in two slightly arched series behind the inner nostrils; skin smooth, with a few scattered flat small warts. Above brown with some obsolete darker spots; on the occiput a large angular dark blotch.

a-c. Adult male and female. South America. From the Mus. Guilding as *Rana gregaria*.
d-y. Adult and young. South America. Mus. Guilding.

3. Cystignathus fuscus.

Rana fusca, *Schneid. Hist. Amph.* p. 130.
—— typhonia, *Daud. Rain.* p. 55. pl. 56. f. 3, 4.
—— virginica, *Merr.* (not *Laur.*) p. 177.
Cystignathus typhonius, *Dum. & Bibr.* p. 402.

Toes not fringed; tympanum distinct; vomerine teeth in two arches, each very convex.

a. Adult. Pernambuco. Presented by J. P. G. Smith, Esq.
b. Adult: stuffed. Antigua.
c. Adult: stuffed. South America. From the Haslar Collection.
d. Large specimen: stuffed. South America. From Mr. Argent's Collection.
e. Adult: skin. South America.
f. Half-grown. South America. From Mr. MacGillivray's Collection.

4. Cystignathus gracilis.

Cystignathus gracilis, *Dum. & Bibr.* p. 406; *D'Orbigny, Voy. Amér. Mérid.* t. 13. f. 5–7.

Tympanum distinct; vomerine teeth in a long, narrow cross series, scarcely interrupted in the middle, and placed behind the internal nostrils; each part slightly convex. Snout conical, pointed; upper jaw produced far beyond the lower. A white dorsal band.

a-c. Adult males. Para. Presented by R. Graham, Esq.
d. Adult female. St. Marthe.

5. Cystignathus schomburgkii.

Cystignathus schomburgkii, *Troschel, in Gay, Historia fisica de Chile*, 1848, and *Wiegm. Archiv*, 1849, p. 59.

Tympanum distinct; vomerine teeth in two rather convex series, scarcely separated in the middle, situated behind the inner nostrils. Snout rather pointed; third finger not much longer than first; second much shorter, nearly as long as fourth; toes not fringed. Above brown, beneath lighter; no white dorsal band.

a. Adult. Brazil. From the Leyden Museum.—It is not without doubt that I refer this specimen to the above species, as it differs from Prof. Troschel's description in having a black streak from the snout through the eye to the loin, and black spots on the sides. The upper lip is white, black-edged.

6. Cystignathus tæniatus.

Girard, Proc. Ac. Nat. Sc. Philad. 1854, p. 226, and *U.S. Naval Astron. Exped.* 1855, ii. p. 207. pl. 34. f. 8–11.

Two black dorsal stripes, a black stripe from the snout through the nostril and eye to the shoulder; belly uniform yellowish; snout moderately pointed; tympanum small, nearly the size of half the eye. Vomerine teeth situated a little behind the inner nares, upon two very small eminences, well separated upon the middle of the palate. Santiago (Chili).

7. Cystignathus ornatus.

Holbrook, N. Amer. Herpetol. iv. p. 103. pl. 25.

Body and head short, as in *Hyla viridis*; skin smooth; tympanum distinct; tongue nearly circular; vomerine teeth in two rounded groups behind the inner nostrils. Dove-colour above with oblong spots of dark brown, margined with yellow.

a. Adult. Georgia. From Mr. Cuming's Collection.—Differs in having the back of a uniform olive-colour; sides with three black spots, viz. a streak from the eye to the shoulder, an oval spot in the middle of the sides, and one or two smaller ones on the loin.

8. Cystignathus nodosus.

Dum. & Bibr. p. 413.

Tympanum indistinct. Vomerine teeth in two small, rather obliquely arranged groups between the inner nares; fingers and toes with large subarticular enlargements.

a. Adult. Chili. Presented by Charles Darwin, Esq.—With yellowish dorsal streak.

b. Half-grown: bad state. South America. Presented by Charles Darwin, Esq.

9. Cystignathus senegalensis.

Cystignathus senegalensis, *Dum. & Bibr.* p. 418; *Smith, Illustr. of S. Africa*, t. 62.

Head and body short and swollen, quite smooth; tympanum indistinct; vomerine teeth in two small, obliquely arranged groups on a level with the hinder edges of the inner nostrils; tongue heart-shaped. Greyish or yellowish, with three broad brown longitudinal bands. South and West Africa.

a. Adult male. South Africa. Presented by A. Smith, M.D.

10. Cystignathus argyreivittis.

Peters, Wiegm. Archiv. 1855, p. 55.

Brownish black, with four white dorsal bands; joints of the extremities white banded or spotted. Boror (Mozambique).

11. Cystignathus georgianus.

Cystignathus georgianus, *Bibr. MSS.*; *Dum. & Bibr.* p. 416: *Bell, Zool. of the Beagle, Rept.* p. 23. t. 16. f. 4.
Crinia georgiana, *Tschudi, Batr.* p. 78.

Tympanum indistinct; vomerine teeth in two very small groups behind the very small inner nostrils; tongue oblong, entire behind; head moderately elongated; toes quite free. Brown, with rose-coloured spots, or with two broad rose-coloured lateral bands.

a-d. Half-grown and adult: not good state. Australia. Presented by Ch. Darwin, Esq.
e. Adult female. Australia. Presented by A. Günther, M.D.
f, g. Adult. Port Essington. Presented by Dr. Fleming.
h. Adult. Port Essington. Presented by Dr. Fleming.

Of the two following species we have only the original specimens, upon which Professor Bell has founded his genus *Borborocœtes*, with the species *grayii* and *bibronii*: these have suffered so much, as not to allow me to give my own description of them. On the other hand, neither the descriptions nor the figures given by Prof. Bell offer sufficient characters for their separation as a different genus. I therefore place them among the *Cystignathi*, and refer to the descriptions of the "Zoology of the Beagle."

12. Cystignathus grayii.

Borborocœtes grayii, *Bell, l. c. Rept.* p. 30. t. 17. f. 2.

Vomerine teeth in two oblique series behind the inner nostrils; wrist without tubercle.

a. Very bad state. Valdivia. Presented by Charles Darwin, Esq.

13. Cystignathus bibronii.

Borborocœtes bibronii, *Bell, l. c.* p. 35. pl. 17. f. 1.
Cystignathus bibronii, *Brit. Mus.* (not *Dum. & Bibr.*).

Vomerine teeth in distinct oblique groups behind the inner nostrils. Wrist with two tubercles.

a. Very bad state. Chonos. Presented by Charles Darwin, Esq.

2. PLEURODEMA.

Head rather short, with obtuse muzzle; extremities moderate; fingers free, with a rudimentary thumb; toes more or less distinctly webbed or fringed; metatarsus with two small blunt tubercles. Skin smooth, or with flat scattered warts; on each loin a large paratoid-like gland. Vomerine teeth in two groups. Tongue subcircular, slightly nicked behind. Eustachian tubes moderate. Sacral vertebræ not dilated. South America.

Pleurodema, *Tschudi, Batr.* p. 84; *Bell, Zool. of the Beagle, Rept.* p. 36.
Cystignathus, sp., *Dum. & Bibr.* viii. pp. 407, 410.

1. Pleurodema labyrinthicum.

Rana labyrinthica, *Spix, Test.* p. 31. t. 7. f. 1, 2.
Cystignathus labyrinthicus, *Dum. & Bibr.* p. 407.

Lumbar gland enormous, covering nearly the whole side, depressed, flat, irregular. Tympanum distinct.

a, *b*. Large specimens. Brazil. From the Leyden Museum.
c. Large specimen: male. Pernambuco. Presented by J. P. G. Smith, Esq.
d. Large specimen: skeleton. Bahia.
e. Large specimen: male: stuffed. South America. From Mr. Argent's Collection.
f. Large specimen: female: stuffed. South America.
g. Large specimen: stuffed. South America.
h. Large specimen: stuffed. Para. Purchased of Mr. Bagaly.

2. Pleurodema bufonium.

Bell, Zool. of the Beagle, Rept. p. 39. pl. 17. f. 5.
? Leiuperus salarius, *Bell* (see page 22).

Lumbar gland large, longer than the head is broad, depressed, flat, elliptical. Toes nearly half-webbed. Tympanum indistinct.

a. Adult. Port Desire (Patagonia). Presented by Ch. Darwin, Esq.
b. Adult. Port Desire (Patagonia). Presented by Ch. Darwin, Esq.

3. Pleurodema bibroni.

Pleurodema bibroni, *Tschudi, Batr.* p. 85.
Cystignathus bibroni, *Dum. & Bibr.* p. 410. pl. 87. f. 2.
Pleurodema darwinii, elegans, *Bell, Zool. of the Beagle, Rept.* pp. 36, 37. pl. 17. f. 3, 4.

Lumbar gland prominent, rounded, oval, not longer than head broad. Toes slightly fringed in all varieties. Tympanum indistinct.

Var. A. Without dorsal streak; lumbar gland whitish, a black spot in the centre.

a. Adult. Maldonado. Presented by Charles Darwin, Esq.—Original specimen for Prof. Bell's *Pleurodema darwinii* not being in a good state, and having lost the vomerine teeth.
b, *c*. Adult. Chili.
d. Adult. Chili. From M. Parzudaki's Collection.
e. Adult. Chili. From Mr. Cuming's Collection.
f. Adult. Shores of Pacific Ocean.
g, *h*. Adult. South America. Presented by Charles Darwin, Esq.
i. Adult. South America. Presented by Charles Darwin, Esq.
k. Adult female. South America. Presented by Charles Darwin, Esq.

Var. B. With an indistinct dorsal streak, conspicuous only in front on the muzzle and on the coccyx. Lumbar gland black, with some small white spots in the centre.

l. Adult male. Venezuela. From Mr. Dyson's Collection.
m. Half-grown. Venezuela. From Mr. Dyson's Collection.

Var. C. Back with a broad whitish longitudinal streak: *Pleurodema elegans*, Bell.

n. Adult. Chiloë. Presented by Charles Darwin, Esq. Original specimen of Prof. Bell's figure.
o. Adult. Chili. From Mr. Bridge's Collection.
p. Adult. South America. Presented by Charles Darwin, Esq.
q-s. Adult. South America. Presented by Charles Darwin, Esq. Intermediate between Var. A. and Var. C.

3. LIMNODYNASTES.

Habit rather stout, sometimes with large head; extremities rather short; fingers quite free; toes quite free or sometimes slightly webbed or fringed. Skin smooth or with scattered flat warts, in one species a large gland on the calf. Palatine teeth in one long, straight, in the middle hardly interrupted series, behind the inner nostrils. Tongue more or less circular, nearly entire behind. Inner nostrils and eustachian tubes moderate; tympanum hidden. Males with an external subgular vocal sac. Australia.

Wagleria, *Girard, Proc. Ac. Nat. Sc. Philad.* vi. p. 421.
Perialia, *Gray, in Eyre's Journ. Exped. Centr. Austr.* i. p. 406.
Limnodynastes, *Fitzinger, Syst. Rept.* p. 31; *Gray, MSS.*
Cystignathus, sp., *Dum. & Bibr.* viii. p. 409; *Gray, in Capt. Grey's West Austr.* p. 446.

1. Limnodynastes dorsalis.

Limnodynastes dorsalis, *Gray, MSS.*
Cystignathus dorsalis, *Gray, in Capt. Grey's West Austr.* p. 446, and in *Eyre's Journ. Exped. Central Austr.* i. *App.* p. 407. pl. 1. f. 2.
? Cystignathus peronii, *Dum. & Bibr.* p. 409.

On each calf a large paratoid-like gland. Head large, broad; snout of moderate length, rounded; tongue circular, entire behind. Above brown, with large, dark, more or less confluent spots; a narrow whitish vertebral line.

a. Adult. West Australia. Presented by J. Gould, Esq.
b. Half-grown. West Australia.
c, d. Adult. Port Essington. Presented by Dr. Fleming*.
e. Adult. Houtmans Abrolhos.

2. Limnodynastes tasmaniensis. (Plate II. fig. B.)

No large gland. Head moderate; snout produced, depressed, flat; tongue cordiform, very slightly nicked behind. Above olive, darker spotted, with a narrow whitish vertebral line.

a–c. Adult. Tasmania. Presented by R. Gunn, Esq.
d. Adult. New Holland. Presented by the Earl of Derby.
e, f. Half-grown. New Holland. Presented by J. B. Jukes, Esq.

Description.—In habit similar to *Discoglossus*; snout rather produced, depressed, flat, rounded in front, canthus rostralis obtuse; nostrils in the middle between eyes and end of snout; eyes moderate, rather prominent; cleft of mouth moderate; a glandular fold behind the angle of mouth. Tongue cordiform, very slightly nicked behind; on each side an opening for the single subgular vocal sac in the male. Inner nares and eustachian tubes small, round; vomerine teeth in a nearly straight, in the middle hardly interrupted line, behind the inner nares. Fingers four; in the adult female the two inner ones broadly fringed; carpus with three flat tubercles; toes five, slightly webbed at the base, slightly fringed; metatarsus with two small soft tubercles. Skin smooth, some warts hardly conspicuous. Sacral vertebra not dilated. Olive, with large and small dark spots, and a whitish line from the muzzle to the anus; a dark streak along each canthus rostralis. Beneath uniform whitish. Length of an adult female $1\frac{2}{3}''$; length of the hinder extremity $2\frac{1}{3}''$; length of the front extremity $1''$.

3. Limnodynastes ornatus.

Discoglossus ornatus, *Gray, Zool. Misc.* p. 5.
Perialia ornata, *Gray, in Eyre's Journ. Exped. Centr. Austr.* i. *App.* p. 407. pl. 2. f. 2.

* In the stomach of one of these specimens I found a half-grown *Heleioporus albo-guttatus*: see p. 39.

No large gland. Head moderate; nostrils near the muzzle; tongue oval, entire behind; toes slightly webbed; palatine teeth as in the other species. Grey, symmetrically marbled with blackish grey on the back; a large whitish spot on the neck.

a. Adult. N. Australian Expedition. Presented by J. R. Elsey, Esq.
b. Adult: bad state. N. Australia. From Mr. Gilbert's Collection.

Fam. 3. DISCOGLOSSIDÆ.

Ranina with webbed toes, with the processes of sacral vertebra dilated, and without paratoid.

Synopsis of the Genera.

1. **Chiroleptes.** First finger opposite to the others. Australia.
2. **Pelodytes.** No finger opposite to the others; tympanum distinct; head without appendages. France.
3. **Discoglossus.** Tympanum hidden; vomerine teeth in a straight line. Shores of the Mediterranean.
4. **Leptobrachium.** Tympanum hidden; no vomerine teeth. Java.
5. **Megalophrys.** Upper eyelid prolonged into a horn; muzzle rounded. East Indies.
6. **Ceratophryne.** Upper eyelid and muzzle prolonged into pointed appendages. Sumatra.

1. CHIROLEPTES.

Skin smooth, with a few scattered flat warts; fingers free, first opposite to the three others; toes one-third webbed, the first cuneiform bone forming a flat oval tubercle with a blunt edge; tympanum distinct; eustachian tubes moderate; tongue elliptic, very slightly notched behind. Vomerine teeth. Australia.

Alytes, sp., *Gray, Zool. Misc.* p. 56.

1. Chiroleptes australis.

Alytes australis, *Gray, l. c.*

Vomerine teeth in two rather oblique and convergent arches, each beginning from the inner front angle of the nostrils. Above uniform brown, with a blackish streak from the muzzle along the canthus rostralis, through the tympanum to the arm-pit.

a, *b*. Half-grown and adult female. Port Essington. From Mr. Gilbert's Collection.

2. PELODYTES.

Skin covered with tubercles; fingers free; toes webbed (sometimes very shortly); no finger opposite the other ones; the first cuneiform bone forming a rounded prominence. Tympanum distinct; eustachian tubes moderate; tongue oval, free, and nearly entire behind. Vomerine teeth. Male with an internal subgular vocal sac. France.

Pelodytes, (*Fitz.*) *Bonap. Faun. Ital.*; *Dum. & Bibr.* viii. p. 460.
Alytes, sp., *Tschudi, Batr.* p. 84.
Rana, sp., *auct. prior.*

1. Pelodytes punctatus.

Rana punctata, *Daud. Rain.* p. 51. pl. 16. f. 11, and *Rept.* viii. p. 100.
—— plicata, *Daud. Rain.* p. 53, and *Rept.* p. 102; *Cuv. Règne Anim.*
—— daudini, *Merr. Tent.* p. 177.
Alytes punctatus, *Tschudi, Batr.* p. 84.
Pelodytes punctatus, (*Fitz.*) *Bonap. Faun. Ital.*; *Dum. & Bibr.* p. 463.

Above spotted with black.

a, *b*. France. From the Paris Museum.
c. Nantes. From Mr. Cuming's Collection.

3. DISCOGLOSSUS.

Habit raniform. Fingers free, a rudimentary thumb like a tubercle; toes shortly webbed in the female, half-webbed in the male. Skin smooth or with scattered flat warts. Tongue nearly circular, entire and free behind. Vomerine teeth in a straight line between the hinder edge of the internal nostrils. Eustachian tubes small; tympanum small, hidden. Male without vocal sac. Shores of the Mediterranean.

Discoglossus, *Otth. Neue Denkschriften der Allgemeinen Schweiz. naturforsch. Gesellsch.* i. p. 6; *Tschudi, Batr.* p. 80; *Dum. & Bibr.* p. 422.
Pseudis, sp., *Gené.*

1. Discoglossus pictus.

Discoglossus pictus, *Otth. l. c.* f. 1–8; *Tschudi, Batr.* p. 80; *Bonap. Faun. Ital.*; *Dum. & Bibr.* p. 425.
Pseudis sardoa, *Gené, Syn. Rept. Sard.* p. 24, and *Mem. Accad. Sc. Tor.* ser. ii. tom. i. p. 257. t. 5. f. 1. 2.
Discoglossus sardus, *Tschudi, l. c.*; *Bonap. Faun. Ital.*

Olive, darker marbled; skin more or less covered with flat warts.

Var. A. **picta.** Skin nearly smooth; spots not confluent; sometimes with one or three whitish longitudinal streaks.

a–e. Adult. Vienna. From Dr. Heckel's Collection.
f, *g*. Adult. Malta. From Miss E. Attersoll's Collection.

Var. B. **sardoa.** Skin warty; spots irregular, rather confluent, without whitish streak.

h. Adult male. Sardinia. From the Leyden Museum.

Var. C. Skin smooth; spots confluent into broad longitudinal bands; a whitish dorsal streak.

i. Adult female. Algiers.

4. LEPTOBRACHIUM.

Habit as in *Ixalus*, but extremities more slender. Skin granular. Fingers completely free; toes short, webbed at the base; a small blunt tubercle on the metatarsus. Tongue rhombic, free, and slightly notched behind. Vomerine teeth none; eustachian tubes moderate; tympanum hidden. Diapophysis of sacral vertebra very much dilated. Java.

Leptobrachium, *Tschudi, Batr.* p. 81.

1. Leptobrachium hasseltii.

Rana hasseltii, *Müll. in Mus. Lugd. Bat.*
Leptobrachium hasseltii, *Tschudi, l. c.*

Above brown, sides, and sometimes back, dotted with black; hinder legs with indistinct narrow black cross bands.

a. Adult. East Indies. From Mr. Frank's Collection.

5. MEGALOPHRYS.

Head and body very much depressed; outer edge of upper eyelid prolonged into a horn; cleft of mouth large; extremities moderate; vomerine teeth scarce; tongue circular, free and nearly entire behind. Tympanum hidden; eustachian tubes moderate. Fingers free; toes very shortly webbed; no prominence on the first cuneiform bone. Diapophysis of sacral vertebra much dilated. Male without vocal sac. East Indies.

Megalophrys, *Kuhl, Bull. Soc. Nat.*; *Wagl. Syst. Amph.* p. 204; *Tschudi, Batr.* p. 82; *Dum. & Bibr.* viii. p. 456.
Ceratophrys, sp., *Schlegel, Abbild.* p. 29.

1. Megalophrys montana.

Megalophrys montana, *Kuhl, Mus. Lugd.*; *Wagl. Syst.* p. 204; *Tschudi, l. c.*; *Dum. & Bibr.* p. 458; *Cantor, Catal. of Mal. Rept.* p. 140.
Ceratophrys montana, *Schleg. Abbild.* t. 9. f. 3.

Olive-brown, with a triangular blackish spot on the head; belly marbled with dark brown, or uniform dark brown. Skin with scattered cutaneous appendages.

a. Adult. India. Presented by Dr. J. E. Gray.
b. Adult. Java. From the Leyden Museum.
c. Adult. Java.
d. Half-grown. Philippine Islands.—All females.

Either to this family or perhaps to the next belongs **Ceratophryne nasuta**, Schleg., from Borneo. I know the animal only from a sketch, communicated to me by Prof. Schlegel; the general external appearance is that of a young *Megalophrys montana* with a pointed appendage in front of the muzzle, similar to the horns of the eyelids; the tympanum is distinct; but the sketch leaves it doubtful whether there is a web between the toes or not.

Fam. 4. ASTEROPHRYDIDÆ.

Ranina with free toes, with the processes of sacral vertebra dilated, and without paratoid.

One genus. New Guinea.

1. ASTEROPHRYS.

Head very large, angular, triangular with very convex crown and produced muzzle; upper edge of the eyelid with some cutaneous appendages; extremities moderate. Vomerine teeth numerous; tongue large, entirely adherent. Tympanum hidden, but perfect; fingers and toes free. New Guinea.

Asterophrys, *Tschudi, Batr.* p. 82.
Ceratophrys, sp., *Schlegel, Abbild.* p. 30.

1. Asterophrys turpicola.

Ceratophrys turpicola, (*Müller*) *Schleg. l. c.* t. 10. f. 4.

Uniform brownish (in spirits).

Fam. 5. ALYTIDÆ.

Ranina with webbed toes, with the processes of sacral vertebra dilated, and with paratoids.

Synopsis of the Genera.

1. **Alytes.** Toes slightly webbed; tympanum distinct. Europe.
2. **Scaphiopus.** Toes completely webbed. North America.
3. **Heleioporus.** Toes half-webbed; tympanum hidden. Australia.

1. ALYTES.

Habit moderate; skin covered with tubercles and warts; above the tympanum a small paratoid. Fingers four, free; toes slightly webbed; the first cuneiform bone forming a small tubercle. Tympanum distinct; eustachian tubes small; tongue circular, thick, adherent, entire behind. Vomerine teeth. Vocal sac none. Europe.

Alytes, *Wagl. Natürliches System der Amphibien*, p. 206; *Tschudi, Batr.* p. 84; *Dum. & Bibr.* viii. p. 465.
Bombinator, sp., *Merr. Tent.* p. 179.
Bufo, sp., Rana, sp., *auct. prior.*

1. Alytes obstetricans.

Bufo obstetricans, *Laur. Syn. Rept.* pp. 28, 128; *Brong. Bull. Soc. Philom.* an viii. p. 91. pl. 6. f. 4; *Latr. Hist. Salam.* p. 40, and *Rept.* ii. p. 112; *Daud. Hist. Rain.* p. 87. pl. 32. f. 1, and *Rept.* viii. p. 176; *Cuv. Règne Anim.*; *Griff. Anim. Kingd.* ix. p. 400.
Rana campanisona, (*Gesn.*) *Laur. l. c.* 30, 133.
Bufo communis, var., *Lacép. Quadr. Ovip.* i. p. 579.
Rana obstetricans, *Wolf, in Sturm, Deutschl. Fauna*, iii. Heft 4.
Bombinator obstetricans, *Merr. Tent.* p. 179; *Gravenh. Delic.* p. 68.
Alytes obstetricans, *Wagl. l. c.*, and *Ic. Amph.* t. 22. f. 3–5; *Schinz, Faun. Helvet.* p. 145; *Tschudi, Isis*, 1837, p. 702, and *Batr.* p. 84; *Bonap. Faun. Ital.*; *Dum. & Bibr.* p. 467.

Brownish-olive with darker specks.

a–c. Adult with eggs. Paris. From M. Parzudaki's Collection.
d. Several specimens. Bonn. Presented by Prof. Troschel.

2. SCAPHIOPUS.

Forehead and crown bony, rugose. Skin smooth; above the tympanum a small paratoid. Fingers four, webbed at the base; toes completely webbed, first cuneiform bone forming a flat, sharp-edged spur. Tympanum distinct; eustachian tubes moderate. Tongue oval, free and slightly nicked behind. Vomerine teeth. Male with an internal subgular vocal sac. North America.

Scaphiopus, *Holbr. N. Amer. Herpet.* iv. p. 109; *Tschudi, Batr.* p. 83; *Dum. & Bibr.* viii. p. 471.

1. Scaphiopus solitarius.

Scaphiopus solitarius, *Holbr. N. Amer. Herpet.* iv. pl. 27; *Tschudi, l. c.*; *Dum. & Bibr.* p. 473.

Brownish olive, with a yellow streak on each side.

a. Adult. North America. Presented by Edward Doubleday, Esq.
b. Adult. Charleston. Presented by P. L. Sclater, Esq.

3. HELEIOPORUS.

Habit stout; head broad, short, swollen; eyes large; extremities short; fingers four, free; inner finger with a blunt tubercle and an acute spur; toes five, half-webbed; first cuneiform bone with a large flat spur, more soft and blunt than in *Pelobates*. Skin of the back granular, of the belly smooth; a large paratoid, not prominent, but conspicuous by an incision in the skin, as in *Rhinophrynus*. Vomerine teeth in a straight, in the middle interrupted line between the inner

nostrils. Tongue round, entire; eustachian tubes as large as inner nostrils; tympanum hidden. Sacral vertebra trihedral, pyramidal. Australia.

Heleioporus, *Gray, in Grey's Journ. West. Austral.* p. 447.
Perialia, sp., *Gray, in Eyre's Journ. Exped. Centr. Austral.* p. 407.

1. Heleioporus albo-punctatus.

Gray, l. c. t. i. f. 2.

Either brownish with white rounded spots, or reddish white marbled with brown.

a. Adult male. West Australia.
b. Adult male. Port Essington. Presented by Dr. Fleming.
c. Adult female. Swan River. From Mr. Gilbert's Collection.
d. Adult. Port Essington. Presented by Dr. Fleming.
e. Half-grown. See *Limnodynastes dorsalis*, No. *d*.
f. Half-grown. Australia. From the Collection of the Zoological Society.

Young animal. Above olive with more or less conspicuous brown spots; on the sides brown, darker spotted:—*Perialia Eyrei*, Gray in Eyre's Journal, p. 407. t. 2. f. 3.

g–k. West Australia. Bank of River Murray. Presented by E. J. Eyre, Esq.—Original specimens for Dr. Gray's figure and description.

Fam. 6. UPEROLIIDÆ.

Ranina with free toes, with the processes of sacral vertebra dilated, and with paratoids.

One genus. Australia.

1. UPEROLEIA.

Habit as in *Pleurodema*; fingers and toes rather slender, quite free; metatarsus with a roundish external and a small conical inner tubercle. Skin rather warty; on each side of the neck a large paratoid. Vomerine teeth none. Tongue small, oblong, rounded, entire behind; eustachian tubes small, tympanum hidden. Male with an internal subgular vocal sac with two openings. Sacral vertebra not much extended. Australia.

Uperoleia, *Gray, in Capt. Grey's West Austr.* p. 448.

1. Uperoleia marmorata.

Gray, l. c.

Black and green marbled, leaving a triangular greenish spot on the forehead; beneath lead-coloured.

a. Adult male, $1\frac{1}{5}''$ long: not good state. West Australia.

Section II. **Bombinatorina.**

O. OXYDACTYLA with maxillary teeth and imperfectly developed ear.

Fam. 1. BOMBINATORIDÆ.

BOMBINATORINA with webbed toes, with the processes of the sacral vertebra dilated, and without paratoids.

Synopsis of the Genera.

1. **Pelobates.** First cuneiform bone forming a flat, sharp-edged spur. Europe.
2. **Bombinator.** Tongue entirely adherent. Europe.
3. **Alsodes.** Tongue free behind; vomerine teeth in two groups. Chonos.
4. **Telmatobius.** No vomerine teeth.

1. PELOBATES.

Head above bony, rough; skin with some flat smooth warts. Fingers free; toes webbed; the first cuneiform bone forming a flat, sharp-edged spur. No tympanum, nor cavum tympani; eustachian tubes lateral, very narrow. Tongue circular, free, and slightly nicked behind. Vomerine teeth in an interrupted line between the interior nostrils. Vocal sac none, but a large gland on the upper arm of the male. Europe.

Pelobates, *Wagl. Syst. Amph.* p. 206; *Tschudi, Batr.* p. 83; *Dum. & Bibr.* viii. p. 475.
Cultripes, *Müller, in Tiedem. Zeitschr. für Physiol.* iv. p. 212, and *Isis*, 1832, p. 336.
Bufo, sp., Rana, sp., *auct. prior.*

1. Pelobates fuscus.

Rösel, Hist. Ran. iv. p. 69. t. 17–19; *Göze, Europ. Faun.* vii. p. 87.
Bufo fuscus, *Laur. Syn. Rept.* pp. 28, 122; *Daubent. Encycl. Méth.* iii. p. 595; *Bonnat. Erpét.* p. 15; *Schneid. Hist. Amph.* p. 196; *Latr. Rept.* ii. p. 109; *Daud. Hist. Rain.* p. 81. pl. 80. f. 1, and *Rept.* viii. p. 161; *Cuv. Règne Anim.*; *Merr. Tent.* p. 187.
Rana fusca, *Meyer, Syn. Rept.* p. 10; *Sturm, Deutschl. Fauna*, iii. Heft 1; *Gravenh. Delic.* p. 32.
—— alliaca, *Shaw, Zool.* iii. p. 146. pls. 41, 42.
Bombina marmorata, *Koch, in Sturm, Deutschl. Fauna*, iii. Heft 5–6.
Pelobates fuscus, *Wagl. l. c.*; *Bonap. Faun. Ital.*; *Tschudi, l. c.*; *Cuvier, Illustr. Rept.* pl. 38. f. 1; *Dum. & Bibr.* p. 477.

Crown and occiput convex. Spurs brown or yellowish.

a, b. Adult. Hanover. Presented by Dr. J. E. Gray.
c. Adult. France. From M. Parzudaki's Collection.
d, e. Adult. Paris. Presented by M. Verreaux.
f, g. Half-grown. Paris.
h. Adult: skeleton. Bondy.

2. Pelobates cultripes.

Rana cultripes, *Cuv. Règne Anim.*
Cultripes provincialis, *Müller, in Tiedem. Zeitschr. Phys.* iv. p. 212, and *Isis*, 1832, p. 538.
Cultripes minor, *Müller, l. c.* (young).
Pelobates cultripes, *Tschudi, Batr.* p. 83; *Dum. & Bibr.* p. 483.

Crown and occiput flat. Spurs black.

a. Adult. France. Presented by M. Verreaux.

2. BOMBINATOR.

Habit moderate. Skin covered with tubercles and warts; fingers free, toes webbed; the first cuneiform bone forming a rounded prominence. No tympanum nor cavum tympani; eustachian tubes lateral, rudimentary, minute or wanting. Tongue nearly circular, entire, very thin, entirely adherent. Vomerine teeth in two small groups between the inner nostrils. Vocal sac none.

Bombinator, *Merrem, Tent.* p. 179; *Cuv. Règne Anim.*; *Tschudi, Batr.* p. 84; *Wagl. Syst. Amph.* p. 206; *Blasius, Wirbelthiere*; *Dum. & Bibr.* viii. p. 485.
Bufo, sp., Rana, sp., *auct. prior.*

1. Bombinator igneus.

Rana bombina, *Linn. Faun. Suec.* p. 101, and *Syst. Nat.* p. 355; *Bonnat. Erpétol.* p. 4; *Sturm, Deutschl. Fauna*, iii. fig. ; *Latr. Hist. Sal.* p. 39.
Bufo igneus, *Rösel, Hist. Ran.* vi. p. 97. t. 22, 23; *Laur. Syn. Rept.* pp. 29, 129; *Bonnat. l. c.* p. 13; *Schneid. Hist. Amph.* p. 187; *Latr. Rept.* ii. p. 110; *Griff. Anim. Kingd.* ix. p. 401; *Daubent. Erpét.* pp. 604, 611, 635, 680; *Lacép. Quadr. Ovip.* i. pp. 535, 595.
Rana ignea, *Shaw, Zool.* iii. p. 116. pl. 35.
Bufo bombinus, *Daud. Rain.* p. 75. pl. 36, and *Rept.* viii. pp. 146, 433; *Schinz, Faun. Helvet.* p. 145.
Bombinator igneus, *Merr. Tent.* p. 179; *Gravenh. Delic.* p. 67; *Cuv. Règne Anim.*; *Tschudi, Batr.* p. 84; *Bonap. Faun. Ital.*; *Dum. & Bibr.* p. 487.
—— bombina, *Wagl. Syst.* p. 206.
—— brevipes, *Blasius, Wirbelth.*
—— pachypus, (*Fitz.*) *Bonap. Faun. Ital.*

Beneath orange, marbled with bluish black.

a. Adult. Europe.
b. Adult. Europe. Presented by the Zoological Society.
c. Adult. Europe.
d. Adult. Europe.
e. Adult. Europe.
f. Adult. France. From M. Parzudaki's Collection.
g. Half-grown. Hanover. Presented by Dr. J. E. Gray.

3. ALSODES.

Head convex, crown smooth. Tongue acutely produced in front, rounded and free behind. Palatine teeth in two small close patches between the interior nostrils. Fingers four, short, webbed at the base (inner toe broad, fringed). Toes webbed to the third phalange. (*Bell.*)—Tympanum, cavum tympanicum, tuba eustachii, wanting. Diapophysis of sacral vertebra appears to be a little dilated towards the end.

Alsodes, *Bell, Zool. of the Beagle*, p. 41.

1. Alsodes monticola.

Bell, l. c. pl. 18. f. 3.

Green, sides yellowish brown. In spirits smoky brown.

a. Bad state. Island of Inchy, Chonos Archipelago. Presented by Charles Darwin, Esq.

The following genus is known to me only by Wiegmann's description and by letters from my friend, Dr. E. v. Martens; according to the latter, the vomerine teeth are certainly absent in the specimen in the Berlin Museum; and, as in *Alsodes monticola*, the inner toe is fringed, which I consider to be a sexual character.

4. TELMATOBIUS.

Head short, with flat crown. Tongue oval, not pointed in front, rounded and free behind. No palatine teeth. Fingers four, short, with a rudimentary membrane between; toes webbed.

Telmatobius, *Wiegmann, Nov. Act.* 1835, p. 262.

1. Telmatobius peruvianus.

Wiegmann, l. c. t. 22. f. 2.

Above with many very small horny warts. Above brown, with a darker longitudinal band, anteriorly crossed by two transverse streaks. Peru.

Section III. Brachycephalina.

O. OXYDACTYLA without maxillary teeth and with imperfectly developed ear.

Fam. 1. PHRYNISCIDÆ.

BRACHYCEPHALINA with webbed toes, with the processes of sacral vertebra dilated, and without paratoids.

One genus. Tropical America.

1. PHRYNISCUS.

Head moderate, with distinct muzzle, angular; body raniform; cleft of mouth moderate; extremities moderate; teeth, none in jaws nor in palate; tongue elongate, free and entire behind. No tympanum nor cavum tympani; eustachian tubes closed or conspicuous; skin entirely or partially warty and spiny or smooth; metatarsus with two small blunt and flat tubercles. Fingers four, toes five, half-webbed. Males with an internal subgular vocal sac. Tropical America.

Phryniscus, *Wiegm. Nov. Act. Leop.* 1834, p. 264; *Dum. & Bibr.* viii. p. 722; *Bell, Zool. of the Beagle*, p. 48.
Chaunus, sp., *Tschudi, Batr.* p. 87.
Phrynidium, *Martens, in Nomenclat. Rept. Mus. Zool. Berol.* 1856, p. 40.
Hylæmorphus, *Fitzinger, Mus. Vienn.*

1. Phryniscus nigricans.

Phryniscus nigricans, *Wiegm. l. c.*; *Dum. & Bibr.* p. 723; *Bell, Zool. of the Beagle*, p. 49. t. 20. f. 3–5.
Chaunus formosus, (*Mus. Leyden*) *Tschudi, l. c.*; *D'Orbigny, Voy. Amér. Mérid.* t. 15. f. 1–4.

All upper and lateral parts covered with warts and small spines; head short, snout very blunt, the elongated outlines forming a rather obtuse angle; crown not concave; plantar and palmar surface and tarsus very rough and tuberculous; all fingers quite free. Above and beneath black; arm-pit, some spots on the belly and anus white.

a–c. Maldonado. Presented by Charles Darwin, Esq.
d. Adult. Montevideo. From M. Parzudaki's Collection.

2. Phryniscus lævis. (Plate III. fig. A.)

Upper parts without spines, with flat warts or quite smooth; head moderate; snout rather protruding, the elongated outlines forming a rather acute angle; canthus rostralis swollen, so as to render the crown concave; plantar and palmar surface with flat smooth tubercles, not rough; tarsus with a cutaneous fold at the inner edge; first and second fingers half-webbed. Above brownish black, beneath whitish; anus brownish.

a, *b*. Adult male and female. Panama. From M. Puffeis' Collection.
c. Adult. Quito.
d, *e*. Young: bad state. Chili. From Mr. Cuming's Collection.

Description.—Habit like *Bombinator igneus*; head angular, with swollen canthus rostralis, so as to render the crown and the loreal region concave; snout rather protruding, perpendicularly truncated, but rounded in front; mouth moderately cleft; nares small, lateral. All upper parts without spines, except upper side of thigh and humerus; crown quite smooth; back with some flat smooth warts; sides, upper parts of thigh and humerus with spiny warts. Extremities short; humerus as long as the occiput is broad; fore-arm rather shorter; thigh and calf as long as humerus; first and second fingers

half-webbed, in one specimen the membrane is only rudimentary; toes half-webbed. Tongue elongate, ovoid, behind rather broader; on each side, in the male, a cleft for the gular sac; eustachian tubes and inner nares small. Size of *Bombinator igneus*.

3. Phryniscus cruciger. (Plate III. fig. B.)

Phrynidium crucigerum, *Martens, l. c.* p. 41.

Upper parts without spines, with a few flat warts; snout pointed, much protruding, obliquely truncated, the prolonged outlines forming an acute angle; canthus rostralis not swollen, crown flat; extremities slender; plantar and palmar surface nearly smooth; tarsus with a cutaneous fold at the inner edge; first and second fingers with a rudimentary membrane between; first finger short. Above olive, punctulated with black and more or less regular figures; beneath uniform whitish.

a–d. Adult. Curanna (2000 feet). From Mr. Dyson's Collection.

Description.—Habit rather slender, raniform. Head angular, canthus rostralis not or not much swollen; crown and loreal region rather flat; nose much protruding, rather rounded in front, obliquely truncated, reaching far beyond the mouth; the lateral outlines, if prolonged, would form an angle of about 55°. Mouth moderately cleft; nares small, lateral, narrow. Back with only a few small flat warts; crown of head quite smooth; upper parts of the extremities covered with small warts; from the eye along the side of back near to the anus a series of flat, large, spiny warts; spiny warts on the sides scarce; under parts quite smooth. Extremities rather slender; humerus much longer than occiput broad; thigh and calf nearly equal in length, much longer than humerus. Toes half-webbed. Tongue much elongate, narrow, entire behind; inner nares small, eustachian tubes none. Only on the right side of the tongue a cleft for the vocal sac. Above olive, punctulated with black; black crossing streaks between the shoulders, three radiating towards the forehead and the two eyelids; black irregular streaks on the back and the legs, sometimes wanting; a black lateral streak along the series of warts, running through the eye; beneath uniform whitish. Body of the largest specimen 3″ long.

I doubted a long time whether the above specimens form a separate species, or whether they belong to *Phrynidium crucigerum*, established and published by Martens in 1856. He found, by a closer examination of the Berlin specimens, that *Phrynidium* agrees with *Phryniscus* in the structure of the ear. But then the only differences between the two genera would be, that the former has one tubercle on the metatarsus and a smooth skin. Both these characters are produced by an imperfect preservation of the Berlin specimens, at least as regards *Phrynidium crucigerum*. The metatarsal tubercles are very flat, and become easily invisible; and the same is the case with the lateral spiny warts, which are so characteristic of the species. Perhaps they are more pronounced in the male (see *Bufo agua*, p. 64).

4. Phryniscus varius.

Atelopus varius, *Stannius, Handb. der Zoot. 2. Aufl. Amph.* p. 16.
Phrynidium varium, *Martens, l. c.* p. 40.

Skin smooth; muzzle rather elongate. Black, with smaller or larger yellow spots; lips and tips of the fingers yellow; legs with yellow spots or cross bands; belly yellow. Veragoa.

5. Phryniscus olfersii.

Phryniscus olfersii, *Martens, Nomenclator Rept. Mus. Zool. Berol.* 1856, p. 40.

Skin entirely smooth; humerus shorter than the occiput is broad. Fingers and toes quite free. Above brownish red, beneath paler; sides with a brown, white-edged band from the muzzle. Brazil.

Fam. 2. BRACHYCEPHALIDÆ.

Brachycephalina with free toes, with the processes of sacral vertebra dilated, and without paratoids.

Synopsis of the Genera.

1. **Pseudophryne.** Five distinct toes; metatarsus with one or two small blunt tubercles. Australia.
2. **Brachycephalus.** Back with a bony shield. Tropical America.
3. **Hemisus.** Metatarsus with a flat, oval, sharp-edged spur. Africa.

1. PSEUDOPHRYNE.

Head moderate, with distinct muzzle, rounded; cleft of mouth moderate; extremities rather short; teeth, none in jaws nor in palate; tongue elongate, free and entire behind. Eustachian tubes rudimentary; no tympanum nor cavum tympani*; skin smooth, with some flat warts; metatarsus with one or two small blunt tubercles; fingers four, toes five, all quite free. Males with an internal subgular vocal sac. Australia.

Phryniscus, sp., *Dum. & Bibr.*
Pseudophryne, *Fitzinger, Syst. Rept.* p. 32.
Bombinator, sp., *Gray.*

1. Pseudophryne australis.

Bombinator australis, *Gray, Proc. Zool. Soc.* 1835, p. 57; *Eyre, Journ. Exped. Centr. Austr.* i. *App.* p. 407. pl. 1. f. 1.
Phryniscus albifrons, *Dum. & Bibr.* ix. p. 413. pl. 100. f. 3.

* I have only examined the structure of the ear in *Pseudophryne australis.*

Above brown; forehead and crown, a streak along the caudal vertebra and some spots on the extremities yellow; beneath brown, with some large elliptical yellow spots. Metatarsus with one tubercle.

a. Adult. Swan River. Presented by J. Wright, Esq. (Original specimen of Dr. Gray's *Bomb. australis*, and different from Bibron's *Phryn. australis*: cfr. *Erpét. Génér.* viii. p. 725.)
b. Adult. Australia. From M. Parzudaki's Collection.

2. Pseudophryne bibronii.

Phryniscus australis, *Dum. & Bibr.* viii. p. 725. pl. 100. f. 2, 4.

Above olive, no white on the head; beneath white, variegated with brown. Metatarsus with two small tubercles.

a. Adult. Australia. Presented by the Earl of Derby.
b. Adult. Australia.
c, *d*. Adult: not good state. Van Diemen's Land. Presented by Sir W. J. Hooker.

2. BRACHYCEPHALUS.

Head moderate; muzzle distinct, rather tapering; cleft of mouth moderate; extremities moderate; fingers four, free, last rudimentary, scarcely visible; toes five, free, the two outer ones rudimentary. Teeth, none in jaws nor in palate; tongue elongate, elliptic, entire. Eustachian tubes rudimentary; no tympanum nor cavum tympani. Skin smooth; on the back a bony shield, formed by the dilated processes of six dorsal vertebræ. Sacral vertebra only feebly dilated. Tropical America.

Brachycephalus, *Fitz. Neue Class. Rept.* p. 39; *Wagl. Syst. Amph.* p. 207; *Tschudi, Batr.* p. 87; *Dum. & Bibr.* p. 726.
Ephippifer, *Cocteau, Mag. Zool. Guérin*, iii. 1835, cum fig.
Bufo, sp., *Spix, Spec. Nov. Test.* p. 48.

1. Brachycephalus ephippium.

Bufo ephippium, *Spix, Spec. Nov. Test.* t. 20. f. 2.
Brachycephalus ephippium, *Fitz. l. c.*; *Wagl. l. c.*; *Tschudi, l. c.*; *Dum. & Bibr.* p. 729.
Ephippifer spixii, *Cocteau, l. c.*

Dull yellowish, sometimes with a large black dorsal spot.

a. Many specimens. Brazil. Purchased by Dr. Gardiner.
b–d. Adult. Tropical America. Presented by Charles Darwin, Esq.

3. HEMISUS.

Head very small, not distinct from body; muzzle distinct, pointed; mouth beneath the muzzle, small; thigh and arms rather short; teeth, none in jaws nor in palate; lower jaw with three tooth-like protuberances in front. Tongue elliptical; no tympanum, no cavum tympani, no eustachian tubes*; fingers four, quite free; toes five, free; metatarsus with a flat, sharp, oval spur. Africa.

Engystoma, sp., *Rapp.*

1. Hemisus guttatum.

Engystoma guttatum, *Rapp, in Erichson's Archiv*, 1842, p. 290. t. 6. f. 3, 4; *Smith, Ill. of S. Afr. App.* p. 27.

Skin smooth. Above blackish brown with round whitish spots, beneath uniform whitish.

a. Adult. Kordofan.
b. Adult. Africa. From Mr. Frank's Collection as *E. guineense* (?).
c. Adult: not good state. Africa. From the stomach of a *Leptodeira rufescens*.

The separation of this species from the Indian *Diplopelma* and the American *Engystoma* appears to be the more justified, as, besides the different structure of the ear, it differs in having a perfect clavicula, entirely wanting in the genera mentioned.

To this genus perhaps belongs *Engystoma marmoratum*, Peters, *Wiegm. Arch.* 1855, p. 58. Mozambique.

Section IV. Bufonina.

O. OXYDACTYLA without maxillary teeth and with perfectly developed ear.

Fam. 1. RHINODERMATIDÆ.

BUFONINA with webbed toes, with the processes of sacral vertebra dilated, and without paratoids.

Synopsis of the Genera.

1. **Rhinoderma.** Muzzle ending in a dermal lobe. Chili.
2. **Atelopus.** Outer toe indistinct. Cayenne.
3. **Uperodon.** Vomerine teeth. East Indies.
4. **Diplopelma.** Five distinct toes; muzzle distinct, rounded in front; no vomerine teeth. East Indies.

* ἥμισυς half, and οὖς ear.

1. RHINODERMA.

Head narrow, rather elongate; muzzle ending in a horizontal dermal lobe; mouth moderate; extremities moderate; fingers four, a rudimentary membrane between; toes five, half-webbed; an indistinct tubercle on the talon. Teeth, none in jaws nor in palate; tongue rather broader and slightly nicked behind; eustachian tubes small. Skin smooth; tympanum hidden; male with an internal subgular vocal sac. Chili.

Rhinoderma, *Dum. & Bibr.* viii. p. 657; *Bell, Zool. of the Beagle, Rept.* p. 47.

1. Rhinoderma darwinii.

Rhinoderma darwinii, *Dum. & Bibr.* p. 659; *Bell, l. c.* p. 48. pl. 20. f. 1, 2.

Blackish, throat and breast black, belly white.

a–d. Adult. Chili. Presented by Charles Darwin, Esq.
e. Adult. Chili. From M. Parzudaki's Collection.
f. Adult: bad state. Chili.

2. ATELOPUS.

Tongue elongate, subelliptical, entire, rounded and equal at each end. Teeth, none in jaws nor in palate. Tympanum hidden; eustachian tubes moderate; fingers four, depressed, quite free*; toes five, outer one indistinct, the other four flattened and webbed at the base. Metatarsus without any tubercles. Male with an internal subgular vocal sac (*Dum. & Bibr.*).

Atelopus, *Dum. & Bibr.* p. 660.

1. Atelopus flavescens.

Atelopus flavescens, *Dum. & Bibr.* p. 661.

Yellowish, spotted with brown. Cayenne.

3. UPERODON.

Head rather short, not very distinct from body; muzzle distinct, broad, rounded; mouth small; thigh and arms rather short; only palatine teeth. Tongue large, circular, entire. Tympanum hidden; paratoids none; eustachian tubes moderate. Fingers four, quite free; toes five, half-webbed. Sacral vertebra dilated. Male with an internal subgular sac. East Indies.

Uperodon, *Dum. & Bibr.* p. 746.
Systoma, (not *Wagler*) *Tschudi, Batr.* p. 86.
Engystoma, sp., *Cuv. Règne Anim.*

* I have never seen the animal: in the diagnosis of the genus, Bibron describes the fingers as "complètement libres;" but in the description of the only species, he says, "un rudiment de membrane réunit les doigts à leur base."

1. Uperodon marmoratum.

Engystoma marmoratum, *Cuv. Règne Anim.*; *Guérin, Iconogr. Rept.* pl. 27. f. 3.
Systoma leschenaultii, *Tschudi, Batr.* p. 86.
Uperodon marmoratum, *Dum. & Bibr.* p. 749.

Olive mottled with brown; metatarsus with two large flat, oval tubercles; a membranaceous prominence behind each inner nostril.

a-c. Adult and half-grown. Madras. Presented by J. C. Jerdon, Esq.
d. Adult female: skeleton. Madras. Presented by J. C. Jerdon, Esq.
e. Adult. India.
f. Adult: not good state. India. From Mr. Parrey's Collection.

The *skeleton* of this species is highly interesting from the *total absence of a clavicula*, which peculiarity was not observed in any of the Batrachia anoura, and of which the two following genera partake. We know too little of the mode of life of these animals to bring it in connexion with a physiological peculiarity. Together with the clavicle, the manubrium sterni is absent. Both *scapula* and *coracoid* are very strong, and the latter has a much dilated inner end, for forming a long suture with that of the other side; the xiphoid is formed by two thin dilated bony plates with a suture between, and together representing a circular, rather concave plate. The *suprascapula* is not entirely ossified, having in the middle a cartilaginous interspace separating the two bony branches from one another, as we find to be more or less the case in many other frogs and toads. The humerus as well as the femur are provided with a sharp ridge along the upper half of the inner side, the ridge of the humerus being broader, about as broad as the diameter of the bone itself; the first cuneiform bone is very enlarged, much more than in *Pelobates fuscus*. The configuration of the skull is very aberrant; all the bones of the cranium being perfectly ossified, large and broad, those of the maxillary and mandibular arch weak and slender. The upper surface of the skull is smooth; the parietal bones are swollen and convex behind, without sharp crest; they are truncated in front, the angle formed by the *sutura coronata* and *sagittalis* being a right one, whilst in other frogs the front part of the parietal bones is pointed, and therefore that angle is an acute one. The frontals are large, irregularly five-sided. *Nine vertebræ*: the atlas has no diapophyses, but these are present in the rest; they are of great length in the second, third and fourth vertebræ, directed forward in the second, backward in the fourth, longest and horizontal in the third; they are short in the fifth to the eighth vertebræ. The diapophyses of the sacral vertebra have about the same size and form as in *Bufo calamita*, each representing an isosceles triangle. The coccygeal style and the iliac bones are slender, cylindrical, the former with a low sharp ridge, the latter with a prominent tubercle on the hinder end, and both branches forming a much acuter angle than in *Bufo calamita*.

4. DIPLOPELMA.

Head small, hardly distinct from body; muzzle distinct, rather pointed; mouth small; thigh and arms rather short; teeth, none in jaws nor in palate. Tongue elongate, elliptic, entire. Tympanum hidden; eustachian tubes very small. Skin smooth; fingers free, toes one-third webbed; two small blunt tubercles on the talon*. Male with an internal subgular vocal sac. East Indies.

Engystoma, sp., *Dum. & Bibr.* viii. p. 745.
Siphneus, *Fitz. Syst. Rept.* p. 33.

1. Diplopelma ornatum.

Engystoma ornatum, *Dum. & Bibr.* p. 745.

Talon with two tubercles; skin smooth; eyes moderate. Toes one-third webbed.

Var. A. A broad dark brown dorsal band, disappearing with age; sides brown; a single oblique brown streak from the hip to the thigh; legs with a few obsolete cross-bands.

a. Many specimens. Madras. Presented by J. C. Jerdon, Esq.
b, c. Young. Madras. Presented by J. C. Jerdon, Esq.
d. Adult female: skeleton. Madras. Presented by J. C. Jerdon, Esq.
e. Adult. India. Presented by Captain Sir E. Belcher.

Var. B. Between the eyes a black cross-band; on the back some arrow-shaped bands, one of which is always darker than the others; hinder part of the back and thighs with dark, black-edged spots.

f. Adult male. China. Presented by J. C. Bowring, Esq.
g. Adult. China. Presented by J. C. Bowring, Esq.
h-k. Adult and young: not good state. China. Presented by J. Reeves, Esq.
l. Adult. Hong Kong. Presented by J. C. Bowring, Esq.
m. Adult male. Hong Kong. Presented by J. C. Bowring, Esq.
n. Adult male. Ningpo. From Mr. Cuming's Collection.
o. Adult. India. From the Haslar Collection.

The structure of the *skeleton* of this species agrees in many points with that of *Uperodon*. As well as I can determine, in a not very well prepared skeleton, the general configuration of the skull is much the same, but the occiput is flat and the vomerine teeth are wanting. The diapophysis of the fourth vertebra is the longest, all the others being much shorter; the diapophysis of the sacral vertebra is not quite as much dilated as in *Uperodon*. The structure of the extremities is the same, and the clavicula is likewise absent, together with the manubrium sterni.

* διπλόος double, and πέλμα sole. Fitzinger's name *Siphneus* is preoccupied by a genus of mammals.

Fam. 2. ENGYSTOMATIDÆ.

Bufonina with free toes, with the processes of sacral vertebra dilated, and without paratoids.

Synopsis of the Genera.

1. **Engystoma.** Head not distinct; muzzle pointed; tympanum hidden. Tropical America.
2. **Breviceps.** Head and muzzle confounded with body; tympanum hidden. South and West Africa.
3. **Chelydobatrachus.** Head protruding, globular; tympanum distinct. Australia.

1. ENGYSTOMA.

Head very small, not distinct from body; muzzle distinct, pointed; mouth small; thigh and arms rather short; teeth, none in jaws nor in palate. Tongue elongate, elliptic, entire. Tympanum hidden; eustachian tubes very small. Fingers four, quite free; toes five, free. Males with an internal subgular sac. Tropical America.

Engystoma, *Fitz. N. Classif. Rept.* p. 65; *Dum. & Bibr.* p. 738.
Stenocephalus, *Tschudi, Batr.* p. 86.
Microps, *Wagler, Isis*, 1828, p. 744, and *Syst. Amph.* p. 200.
Oxyrhynchus, (*Valenc.*) *Guérin, Iconogr. Rept.*
Bufo, sp., Rana, sp., *auct. prior.*

The species of this genus exhibit *no clavicula*.

1. Engystoma ovale.

Rana ovalis, *Schneid. Hist. Amph.* p. 13; *Shaw, Zool.* iii. p. 3.
Bufo surinamensis, *Daud. Rain.* pl. 33. f. 2, and *Rept.* viii. p. 184.
—— ovalis, *Daud. Rain.* p. 92, and *Rept.* viii. p. 187.
Rana bufonia, *Merr. Tent.* p. 177.
Engystoma ovale, *Fitz. Neue Classif. Rept.* p. 65; *Dum. & Bibr.* p. 741.
Oxyrhynchus bicolor, (*Valenc.*) *Guérin, Iconogr. Rept.* pl. 27. f. 2.
Microps unicolor, *Wagl. l. c.*
Stenocephalus microps, *Tschudi, Batr.* p. 86.

Talon with only a single tubercle; muzzle pointed; eyes moderate; skin smooth; a white streak along the hinder side of the thighs.

a. Adult. America. From Mr. Frank's Collection.

2. Engystoma carolinense.

Engystoma carolinense, *Holbr. N. Amer. Herpet.* v. p. 23. pl. 6; *Dum. & Bibr.* p. 743.
—— carolinense et olivaceum, *Hallowell, Proc. Ac. Philad.* 1856, p. 251.

Talon with one (exceptionally with two) tubercles; muzzle rather

obtuse ; eyes moderate ; skin smooth ; thighs without white streak ; sometimes a cutaneous fold across the occiput.

a. Adult. Mexico. From M. Parzudaki's Collection. Talon with two tubercles.
b, *c*. Adult and half-grown. New Orleans.
d, *e*. Half-grown and young. North America. Presented by Edward Doubleday, Esq.
f. Adult: fine specimen. Cordova. From M. Sallé's Collection. Rose-coloured ; back with an irregular broad dark band ; sides of the head and body brown ; hip with a round black spot ; legs with three broad black-edged bands ; belly white, marbled with brown ; throat brown, marbled with white.
g, *h*. Half-grown. Cordova. From M. Sallé's Collection. One of these specimens agrees with the former ; the other one, probably a female, with *E. olivaceum*, Hallowell.

3. Engystoma rugosum.

Engystoma rugosum, *Dum. & Bibr.* p. 744.

Talon with only a single tubercle. Skin rugose.

a. Half-grown. Mexico. From M. Parzudaki's Collection.

4. Engystoma microps.

Engystoma microps, *Dum. & Bibr.* p. 744.

Talon with only a single tubercle ; muzzle much pointed ; skin smooth ; eyes excessively small (*Dum. & Bibr.*). Brazil.

2. BREVICEPS.

Head very short, confounded with body ; muzzle indistinct, mouth small ; thigh and arms very short, indistinct ; teeth, none in jaws nor in palate ; tongue oval, entire. Tympanum hidden ; eustachian tubes very small. Fingers four, toes five, all quite free. South and West Africa.

Breviceps, *Merr. Tent.* p. 178 ; *Dum. & Bibr.* p. 752.
Systoma, *Wagl. Syst. Amph.* p. 205 ; *Tschudi, Batr.* pp. 47, 86.
Engystoma, sp., *Cuv. Règne Anim.*
Rana, sp., Bufo, sp., *auct. prior.*

1. Breviceps verrucosus.

Breviceps verrucosus, *Rapp, in Erichson's Archiv für Naturgesch.* 1842, p. 289. t. 6. f. 5 ; *Smith, Ill. of S. Afr. App.* p. 27.

Above and beneath covered with perforated granular glands ; head

not prominent; muzzle distinct, its outlines forming a convex line. Either uniform blackish brown or with brownish-yellow spots.

a. Adult male. South Africa. Uniform blackish brown.
b. Adult female. South Africa. Above brown, with four series of brownish-yellow spots; along the middle of back brown; beneath dull yellowish.

2. Breviceps gibbosus.

Seba, ii. 37. 3.
Bufo acephalus, *Klein, Quadr. Disp.* p. 121.
Rana gibbosa, *L. Mus. Ad. Fried.* p. 48, and *Syst. Nat.* p. 355.
Bufo gibbosus, *Laur. Syn.* p. 27; *Daub. Erpét.* p. 594; *Lacép. Hist. Quadr. Ovip.* i. p. 599; *Bonnat. Erpét.* p. 17; *Latr. Rept.* ii. p. 119; *Daud. Hist. Rain.* p. 80. pl. 29. f. 1. pl. 35. f. 2, and *Rept.* viii. p. 158.
Rana breviceps, *Schneid. Hist. Amph.* p. 140; *Shaw*, iii. p. 170. pl. 52.
Breviceps gibbosus, *Merr. Tent.* p. 178; *Gravenh. Delic.* p. 69; *Dum. & Bibr.* p. 754; *Smith, Ill. of S. Afr. App.* p. 27.
Engystoma dorsatum et granosum, *Cuv. Règne Anim.*
Systoma breviceps, *Wagl. Syst.* p. 205; *Tschudi, l. c.*

Skin in adult specimens not granular; head completely confounded with the body; muzzle not distinct, its outlines forming a slightly convex line. Brown, with a broad, brownish-yellow, serrated dorsal band; an obsolete lateral streak of the same colour.

a. Adult: discoloured. South Africa. From Mr. Brandt's Collection.
b, *c*. Young. South Africa.

Both the species are provided with a clavicula.

3. CHELYDOBATRACHUS.

Body short, broad, rather depressed; head protruding, globular, small; extremities excessively short; mouth small; teeth, none in jaws nor in palate; tongue rather elongate, elliptical, free and entire behind. Tympanum distinct; eustachian tubes nearly as large as inner nares, moderate. Skin smooth, with a few flat warts, rather rugose. Fingers (four) and toes (five) quite free. Australia.

Chelydobatrachus, *Gray, Brit. Mus.*

1. Chelydobatrachus gouldii.

Breviceps gouldii, *Gray, in Capt. Grey's West Australia*, t. . f. .
Chelydobatrachus gouldii, *Gray, Brit. Mus.*

Smooth with a few scattered tubercles; above greyish brown, beneath lighter.

a. Adult. West Australia. From Mr. Gilbert's Collection.
b. Adult. West Australia. Houtman's Abrolhos.

After having removed the skin and the *musculus rectus abdominis*,

which, being much developed, takes its origin from the upper part of the humerus as well as from the sternum, we see the large liver divided into one right lobe and two left ones; the gall-bladder is situated between the right and the middle lobe, fixed to the parenchyma; the stomach on the left side, filled with ants; the *intestina tenuia* have a wide diameter, not much narrower than the rectum, which is placed in the medial line. The eggs are very large, half the size of a pea, and there are only twenty to twenty-four in one *ovarium*; no sign of an embryo is visible therein, although the eggs appear to be ripe for being laid. I could not find a bladder. There is a clavicula as well as a coracoid bone.

Fam. 3. BUFONIDÆ.

Bufonina with webbed toes, with the processes of sacral vertebra dilated, and with paratoids.

Synopsis of the Genera.

1. **Kalophrynus.** Skin smooth; skin of the back forming one large, flat paratoid. East Indian Islands.
2. **Bufo.** Crown flat, or with moderate ridges; muzzle rounded or truncated; no cutaneous fold on the sides; paratoids prominent. Almost every part of the globe except Australia.
3. **Otilophus.** Crown with two enormous erect ridges; muzzle pointed; a large cutaneous fold on the sides; paratoids prominent. South America.

1. KALOPHRYNUS.

Head small, angular; body as in *Engystoma*; muzzle distinct, rather pointed; mouth small; thigh and arms rather short; teeth none in jaws nor in palate; tongue oval, free, and very slightly notched behind. Tympanum round, very distinct; eustachian tubes moderate. Skin with smooth surface, but very thick on the back, and entirely glandular, like a paratoid. Fingers four, quite free; toes five, shortly webbed. Sacral vertebra dilated. Borneo. Sumatra.

Kalophrynus, *Tschudi, Batr.* p. 86.

1. Kalophrynus pleurostigma.

Mus. Lugd. Bat.

A white streak from the nose along the canthus rostralis, the edge of upper eyelid and the sides of back; on each hypochondrium a dark brown round spot.

a. Adult female. Borneo.

2. BUFO.

Head moderate, muzzle distinct, truncated, eye moderate; thigh and arms rather short; teeth, none in jaws nor in palate. Tongue elliptical, entire, free behind. Tympanum more or less distinct; paratoids very distinct, swollen; skin more or less warty. Eustachian tubes moderate. Fingers four, quite free; toes five, generally half-webbed, sometimes entirely webbed; a blunt (in *B. anomalus* sharp) tubercle at the base of the first toe. Males generally with a single internal vocal sac. Almost every part of the globe except New Holland.

Bufo, *auctorum*.

1. Bufo vulgaris.

Rana rubeta, *Gesner, Hist. Anim.* ii. p. 59.
Bufo terrestris major, *Schwenckfeld, Theriotroph. Siles.* p. 159.
Rana bufo, *L. Mus. Ad. Fried.* p. 48, and *Syst. Nat.* i. p. 354; *Roesel*, p. 85. t. 20, 21; *Müll. Zool. Dan. Prodr.* p. 35; *Meyer, Syn. Rept.* p. 8; *Sturm, Deutschlands Fauna*, iii. Heft 1; *Shaw, Zool.* iii. p. 138. pl. 40.
Bufo vulgaris, *Laur. Syn. Rept.* pp. 28, 125; *Daub. Dict. Anim.* p. 612; *Lacép. Hist. Nat. Quadr. Ovip.* i. p. 568; *Bonnat. Encycl.* p. 16; *Latr. Rept.* i. p. 106 (B. roeselii, ventricosus); *Daud. Rept.* viii. p. 139 (B. cinereus, roeselii, spinosus, ventricosus); *Shaw, Zool. Lect.* pl. 91; *Cuv. Règne Anim.*; *Guérin, Iconogr.* pl. 27. f. 1; *Wagl. Syst.* p. 207; *Eichw. Zool. Spec.* p. 67; *Faun. Casp.-Caucas.* p. 127. t. 31; *Jenyns, Brit. Vertebr.* p. 30; *Holandre, Faune Départ. Moselle*, p. 223; *Schinz, Faun. Helvet.* p. 144; *Tschudi, Batr.* p. 88; *Bonap. Fauna Ital.* pl. ; *Bell, Brit. Rept.* p. 105. fig. ; *Dum. & Bibr.* p. 670 (Synonyma complete).
—— cinereus, *Schneid. Hist. Amph.* p. 185; *Merr. Tent.* p. 182; *Gravenh. Delic.* p. 62.
—— palmarum, *Cuv. Règne Anim.*
—— alpinus, *Schinz, l. c.*

Crown flat, without bony enlargement. Paratoids oblong, elliptical, edged below with black. Tarsus without cutaneous fold. Toes half-webbed. Olive or brownish, sometimes black-spotted; beneath whitish, sometimes black-spotted.

A. *European variety.* Glands of the back generally smooth, without horny surface, flat, numerous.

a. Adult: skeleton. England.
b. Adult female. England. Mus. Leach.
c. Adult. Devonshire. Mus. Leach.
d. Adult. Isle of Arran. Mus. Leach.
e. Adult. Isle of Arran. Mus. Leach.
f. Adult. Paris. From M. Parzudaki's Collection.
g, *h*. Adult. Sine patria.
i. Adult: stuffed. Athens. Presented by C. W. Merlin, Esq.
k. Adult: skeleton. Sicily.

l. Adult. Sicily. (*B. palmarum*.)
m. Young: discoloured. Sine patria.
n, *o*. Larvæ. Bononia. Presented by J. J. Bianconi.

B. *Asiatic varieties*. Sides very distinctly marbled with black; belly black-spotted. Glands with horny surface.

α. **Bufo gargarizans**, *Cantor*, *Ann. of Nat. Hist.* 1842, p. 483. Tubercles not numerous, of unequal size.

p, *q*. Adult and young. Chusan. Presented by the Hon. East India Company.
r, *s*. Adult. Chusan. Presented by the Hon. East India Company.
t-*v*. Half-grown and young. Chusan.

β. **Bufo vulgaris japonicus**, *Schlegel*, *Faun. Jap.* 106. t. 2. f. 5, 6.—Tubercles numerous, of nearly equal size.

w, *x*. Adult and half-grown. Ningpo (China). From Mr. Cuming's Collection.
y, *z*. Half-grown. Ningpo. From Mr. Cuming's Collection.
α-ε. Adult and half-grown. Japan. From the Leyden Museum.

2. Bufo chilensis.

? Bufo thaul, *Molina*, *Hist. Nat. Chili*, p. 194; *Schneid. Hist. Amph.* p. 227; *Merr. Tent.* p. 181.
—— thaul, *Garn. et Less. Voy. Coq.* ii. pl. 7. f. 6.
—— chilensis, (*Mus. Paris*) *Tschudi*, *Batr.* p. 88; *Eydoux et Soul. Voy. Bonite*, *Rept.* t. 9. f. 1, 2; *Bell*, *Zool. Beagle*, p. 49; *Dum. & Bibr.* p. 678.
—— spinulosus, *Wiegm. Nov. Act.* xvii. t. 22. f. 3; *Tschudi*, *Batr.* p. 88.

Crown without bony enlargement. Paratoids short, subtriangular. Tarsus with a cutaneous fold at the inner edge*. Toes half-webbed. Tympanum very distinct. Olive or brownish, with darker, sometimes confluent spots; beneath whitish, uniform or black-spotted.

a. Adult. Valparaiso. Presented by Charles Darwin, Esq.
b-*d*. Adult. Chili.
e. Adult. Chili.
f. Half-grown. Chili.
g. Half-grown. Chili. From Mr. Bridge's Collection.
h, *i*. Young. Chili. Presented by Charles Darwin, Esq.
k. Adult. Chili. Presented by J. B. Pentland, Esq.
l. Adult. California. From Mr. Stevens's Collection.—This agrees with the specimens from Chili, except in having a darker coloration, and a very narrow whitish vertebral line.

* Bibron is wrong in denying the existence of this cutaneous fold: all the specimens in the British Museum Collection exhibit it very well developed.

3. Bufo anomalus.

Crown without bony enlargement, flat; paratoids of moderate size, subquadrangular; tarsus with a series of small rough tubercles at the inner edge; first cuneiform bone with a sharp, horny edge, black as in *Pelobates cultripes*; the opposite tubercle much smaller, rounded, black at the tip. Toes half-webbed, the third finger longer than the fourth, the third toe longer than the fifth. Upper parts and sides of the neck with small spiny warts. Tympanum hidden, very small, about one-fifth of the eye. Olive, upper and lateral parts irregularly spotted with black; belly yellowish, with a few small black spots.

a. Adult male. Mexico. Purchased of M. Parzudaki.

Length of the body $1\frac{2}{3}''$; length of the anterior extremity $1''$; length of the posterior extremity $2''$.—This interesting species differs from all the others in having a sharp metatarsal tubercle and an exceedingly small tympanum. It may hereafter prove to be the type of a separate genus. The denomination "*anomalus*" I found on the label of the bottle containing the animal, without any indication where and by whom the name was given.

4. Bufo calamita.

Roesel, Hist. Ran. t. 24; *Pennant, Brit. Zool.* iii. p. 19.
Bufo calamita, *Laur. Syn. Rept.* p. 27. t. 1. f. 1; *Daub. Encycl.* iii. p. 296; *Lacép. Hist. Nat. Quadr. Ovip.* i. p. 592; *Bonnat. Encycl.* p. 18; *Latr. Rept.* ii. p. 114; *Daud. Hist. Rain.* p. 77, and *Rept.* viii. p. 153; *Merr. Tent.* p. 182; *Cuv. Règne Anim.*; *Gravenh. Delic.* p. 65; *Wagl. Syst.* p. 207; *Eichw. Zool. Spec.* iii. p. 167; *Jenyns, Brit. Vert.* p. 302; *Tschudi, Batr.* p. 88; *Bonap. Faun. Ital.*; *Bell, Brit. Rept.* p. 116. fig.
Rana fœtidissima, *Herm. Aff. Anim. Tab.* p. 260.
—— portentosa, *Blumenb. Handb.* p. 243; *Sturm, Deutschlands Fauna*, iii. Heft 1.
Bufo cruciatus, *Schneid. Hist. Amph.* p. 193.
Rana mephitica, *Shaw, Zool.* iii. p. 149.
Bufo rubeta, *Fleming, Brit. Anim.* p. 159; *Jenyns in Trans. Cambr. Phil. Soc.* 1830, p. 373.
—— portentosus, *Schinz, Fauna Helvet.* p. 144.
—— viridis, part., *Dum. & Bibr.* p. 681.

Crown without bony enlargement. Paratoids elliptic, not black-edged; a paratoid-like gland on the upper side of legs. Tympanum hidden. Toes half-webbed. Brownish, with rounded black spots; a yellowish vertebral line, sometimes wanting; belly whitish, generally black-spotted.

a–c. Adult and young. Blackheath.
d, *e*. Adult. Cambridgeshire.
f. Adult. Kerry, Ireland. Presented by Dr. Purcell.
g, *h*. Young. Hamburg. Presented by Dr. Fricker.
i. Adult. Calais. Presented by W. Leach, M.D.

k-m. Adult and half-grown. Europe. Old Collection.
n-q. Young. Europe.
r. Adult: stuffed. Europe.
s. Adult: stuffed. Europe.
t. Adult: skeleton. Europe.

5. Bufo viridis.

Bufo viridis, *Laur. Syn. Rept.* p. 111; *Daub. Encycl. Méth.* p. 696; *Lacép. Quadr. Ovip.* i. p. 586; *Bonnat. Encycl.* p. 17; *Schneid. Hist. Amph.* p. 200; *Latr. Rept.* ii. p. 115; *Daud. Hist. Rain.* p. 79. pl. 28. f. 2, and *Rept.* viii. p. 156; *Bibr. & Bory de St. Vinc. Expéd. Sc. Morée, Rept.* pl. 15. f. 2, 3; *Bonap. Faun. Ital.* fig. ; *Dum. & Bibr.* p. 682 (Synonymy).
Rana bufina, *Müll. Prodr. Zool. Dan.* p. 293; *Retz. Faun. Suec.* p. 283; *Bonnat. l. c.* p. 17.
—— sitibunda, *Pall. Reis.* i. p. 458.
—— variabilis, *Pall. Spic. Zool.* vii. p. 1. t. 6. f. 1, 2; *Sturm, Deutschlands Fauna*, iii. Heft 2; *Cuv. Règne Anim.*; *Merr. Tent.* p. 180; *Gravenh. Delic.* p. 63; *Wagl. Syst.* p. 207; *Eichw. Zool. Spec.* iii. p. 167; *Tschudi, Batr.* p. 88; *Schinz, Faun. Helv.* p. 145; *Eichw. Faun. Caspio-Caucas.* p. 126.

Crown without bony enlargement. Paratoids elliptic, not black-edged; no large gland on the upper side of legs; tympanum rather indistinct, not quite half the size of eye. Toes half-webbed; third finger rather longer than fourth. Two soft, blunt tubercles of moderate size on the metatarsus, not coloured. Olive, with darker, brownish, black-edged, generally kidney-shaped spots; never a dorsal streak; beneath uniform whitish.

a. Adult. Europe. Presented by A. Russell, Esq.
b–d. Adult. Germany. Purchased of Dr. Heckel.
e. Half-grown. Mediterranean. Presented by Mr. Miller.
f. Adult. Turin. Presented by Prof. Bonelli.
g. Adult. Xanthus. Presented by Charles Fellows, Esq.
h. Half-grown. Crimea. Presented by B. L. Hawkins, Esq.
i. Adult: discoloured. Euphrates. From Capt. Chesney's Expedition.
k. Half-grown. Euphrates. From Capt. Chesney's Expedition.
l. Adult. Kurdistan.
m. Many specimens. Tripoli.
n. Adult. Tripoli. Presented by J. Ritchie, Esq.
o-q. Half-grown. Tripoli. Presented by J. Ritchie, Esq.
r. Adult. Egypt. Presented by J. Burton, jun., Esq.
s. Adult. Egypt. (*Bufo hemprichii*, Mus. Vienn.)
t-v. Half-grown. Egypt. Presented by M. Lefebvre.
w, x. Young. Guezama. Presented by Sir W. C. Trevelyan.
y. Adult: stuffed. Sine patria.

This species, so well known in the south of Germany, never exhibits a large gland on the legs, as is represented in vol. viii. of

the *Erpétologie générale*, where the species is confounded with *B. calamita*, frequently found in the north of Germany and in this country. *B. viridis* is closely allied to *B. pantherinus*, and the circumstance of both being found together in North Africa has almost alone prevented me from uniting the species.

6. Bufo pantherinus.

Geoffr. Descript. de l'Eg. Rept. pl. 4. f. 1, 2.
Bufo pantherinus, *Boie, Mus. Lugd. Bat.*; *Tschudi, Batr.* p. 88; *Dum. & Bibr.* p. 687.
—— arabicus, *Rüpp. Atl. Rept.* t. 3. f. 2.
—— regularis, *Reuss, Mus. Senck.* i. p. 60.

Crown without bony enlargement, rather concave. Paratoids elliptic, not black-edged; no large gland on the upper side of legs; tympanum very distinct, half the size of eye or more. Toes half-webbed; third finger rather longer than fourth. Olive or brownish, with darker, black-edged, kidney-shaped large spots. Beneath uniform, in young specimens black-spotted.

a. Adult. Africa. From M. Parzudaki's Collection.
b. Adult. Africa. (*B. nubicus.*)
c-e. Adult. Egypt. Presented by A. Christy, Esq.
f-h. Half-grown. Egypt. Presented by A. Christy, Esq.
i, k. Adult. Tunis. From Mr. Fraser's Collection.
l. Adult. Tangiers. From Mr. Fraser's Collection.
m. Adult: stuffed. Algiers. From M. Parzudaki's Collection.
n. Adult: stuffed. Algiers. From M. Parzudaki's Collection.
o. Adult. W. Africa. From Mr. Rich's Collection.
p, q. Adult: discoloured. Gambia.
r. Adult. South Africa. Presented by Dr. A. Smith.
s. Adult female. Cape of Good Hope. Presented by Dr. A. Smith.
t. Half-grown: bad state. Cape of Good Hope. Presented by the Zoological Society.
u-z. Adult. Africa. From Mr. Jamrach's Collection.—Hinder side of legs beautiful purple, with brown spots.

There are moreover in the Collection two specimens belonging to Dr. Smith's *Bufo angusticeps*, the condition of which does not allow me to give an exact diagnosis; but I am rather disposed to consider this species as identical with *B. pantherinus*.

Bufo angusticeps, *Smith, Ill. of S. Afr.* pl. 69. f. 1, 1*a*.

a. Cape of Good Hope. Presented by the Lords of the Admiralty.
b. South Africa.

7. Bufo guineensis.

Mus. Lugd. Batav.

Crown without bony enlargement, broad, quite flat. Paratoids

narrow, much elongate, not black-edged, parallel to the vertebral line; no large gland on the upper side of legs; tympanum very distinct. Toes half-webbed; third finger slender, much longer than fourth. Brownish, with four or five pairs of large, dark, black-edged spots; sometimes with a very narrow whitish vertebral line.

a. Adult. West Africa. From Mr. Fraser's Collection.
b. Adult. Fernando Po. From Mr. Fraser's Collection.
c. Adult. Coast of Guinea. From M. Parzudaki's Collection.
d. Adult. Coast of Guinea. From Mr. Frank's Collection.
e. Young. Sierra Leone.

8. **Bufo tuberosus.** (Plate III. fig. C.)

Crown without bony enlargement, broad, rather concave. Paratoids not elongate, oblique, oval, not black-edged; no large gland on the upper side of legs; tympanum distinct, small, round. Toes not quite half-webbed; fingers slender, third much longer than fourth. Uniform dirty brown, with some obsolete darker blotches; beneath dull yellowish, spotted with brown. Above and beneath very warty; warts covered with horny spines.

a. Adult. Fernando Po. From Mr. Fraser's Collection.

Description of the specimen.—No other Toad in the British Museum Collection exhibits such a warty and rough skin; on the back the warts bear a horny spine in the centre, surrounded by a ring of other ones. In general appearance the species is somewhat similar to *B. pantherinus*, but the snout is angular and slightly compressed. Skin of head closely adherent to the skull; a series of tubercles along the canthus rostralis; eyelids covered with numerous, high, conical tubercles. Cleft of mouth moderate; edge of upper jaw sharp; tongue very narrow, much elongate. Paratoids with a very rough surface, obliquely situated on the shoulder, regularly oval, once and a half as long as broad. Back covered with small conical tubercles and with larger warts, bearing spines as above mentioned. Under parts covered with numerous conical tubercles, but without warts. Extremities rather slender; metacarpus with two blunt tubercles, larger than those on the tarsus; along the under side of each finger and toe a series of very prominent, smooth, rounded tubercles. Toes not quite half-webbed. Inner edge of tarsus not folded, tuberculous. Size of *B. viridis*.

9. **Bufo celebensis.**

Mus. Lugd. Batav.

Crown broad, rather flat; along the canthus rostralis a sharp low ridge, forming a convex line in front; another bony and not sharp enlargement, beginning from the inner edge of eyelid, bent outwards, and swollen on the occiput, not continuous with the anterior ridge.

Paratoid situated behind the swollen end of the bony enlargement, elongate, oval; tympanum rather indistinct. Toes not quite half-webbed; tarsus without cutaneous fold.

a. Adult. Celebes. From Mr. Frank's Collection as *Bufo daudinii*.
b. Adult. India. From Mr. Parrey's Collection.

10. Bufo melanostictus.

Bufo melanostictus, *Schneid. Hist. Amph.* p. 216; *Gravenh. Delic.* p. 57; *Cantor, Catal. of Malayan Rept.* p. 142.
—— scaber, *Daud. Hist. Rain.* p. 94. pl. 34. f. 1, and *Rept.* viii. p. 194; *Latr. Rept.* ii. p. 134; *Tschudi, Batrach.* p. 88; *Dum. & Bibr.* p. 699.
—— bengalensis, *Daud. Rain.* p. 96. pl. 35. f. 1, and *Rept.* viii. p. 197; *Lesson, Voy. Bel. Rept.* p. 334.
—— carinatus, *Gray, Ind. Zool.* pl. .

Crown concave, with a bony enlargement round the orbit above, and bent down between orbit and paratoid. Paratoids moderate, prominent, ovoid. Toes half-webbed; tarsus tuberculous, without cutaneous fold. Back and sides with conical spine-bearing tubercles.

a. Adult. China.
b, *c*. Adult. China. Presented by J. Reeves, Esq.
d. Adult. China. Presented by J. Reeves, Esq.
e, *f*. Adult. China.
g. Adult. China.
h. Adult: not good state. China.
i. Adult. China.
k. Adult. China.
l. Half-grown. China. From the Haslar Collection.
m, *n*. Young. China. Presented by J. C. Bowring, Esq.
o–*q*. Half-grown. Sikkim. Presented by Dr. Hooker. Back rather more warty.
r. Adult. Nepal. Presented by B. H. Hodgson, Esq.
s. Adult: skin. Nepal. Presented by B. H. Hodgson, Esq.*
t, *u*. Adult and half-grown. Bengal. Presented by the Zoological Society.
v–*x*. Adult and half-grown. Madras. Presented by J. C. Jerdon, Esq.
y. Adult: stuffed. Madras.
z, *α*. Adult and half-grown. Ceylon. From Mr. Cuming's Collection.
β–*ε*. Half-grown and young. Ceylon. From Mr. Cuming's Collection.
ζ, *η*. Adult. Ceylon. Presented by Dr. Kelaart.
θ. Adult. Java.
ι, *κ*. Half-grown. Java. From the Leyden Museum.
λ, *μ*. Adult. Borneo.
ν. Half-grown. Borneo.

* The specimens from Northern India have rather larger paratoids.

ξ. Adult. Philippine Islands. From Mr. Cuming's Collection.
o. Adult. India. Purchased.
π. Adult. India. Presented by the Zoological Society.
ρ. Adult. Asia.
σ–χ. Adult. Asia. Presented by the Earl of Derby.
ψ. Half-grown. Asia.

11. Bufo asper.

Bufo asper, *Leyd. Mus.*; *Gravenh. Delic.* p. 58; *Tschudi, Batrach.* p. 88; *Dum. & Bibr.* p. 668.

Crown concave, swollen round the orbit above, but not forming a crenulated ridge, with a large bony enlargement between the orbit and paratoid. Paratoids moderate, subtriangular. Tarsus with a cutaneous fold internally. Back and sides with conical spine-bearing tubercles.

a. Adult. Java. From the Leyden Museum.
b, *c*. Adult: not good state. Mergui. Presented by Prof. Oldham.

12. Bufo biporcatus.

Bufo biporcatus, (*Schleg.*) *Tschudi, Batr.* p. 88; *Gravenh. Delic.* p. 53; *Dum. & Bibr.* p. 714.

Forehead and crown concave, on each side a bony ridge, both convergent anteriorly, parallel and straight posteriorly. Snout rather compressed in front. Paratoids small, oval; tympanum very distinct. Toes two-thirds webbed; tarsus without cutaneous fold at the inner edge.

a, *b*. Adult. Java. From the Leyden Museum.

13. Bufo cruentatus.

Bufo cruentatus, *Leyd. Mus.*; *Tschudi, Batrach.* p. 88; *Dum. & Bibr.* p. 665.

Two paratoids on each side,—one on the neck, the other one near the shoulder.

a. Adult. Java. From the Leyden Museum.

14. Bufo isos.

Bufo isos, *Lesson, Voy. Bel. Rept.* p. 333. pl. 7; *Dum. & Bibr.* viii. p. 702.

Upper edge of the orbits rather prominent; edge of the upper jaw free, sharp, and slightly nicked in the centre. Paratoids twice as long as broad, rather pointed behind, rounded in front. Tympanum large, distinct. Toes entirely webbed. Edge of tarsus tuberculous, without cutaneous fold (*Dum. & Bibr.*). Asia; Bengal.

15. Bufo lentiginosus.

Rana terrestris, *Catesby, Nat. Hist. Carol.* ii. pl. 69; *Bart. Travels in Carol.* p. 279.
—— musica, *Linn. Syst. Nat.* i. p. 354 (incorrect description).
Bufo lentiginosus, *Shaw, Zool.* iii. p. 173.
—— musicus, *Latr. Rept.* ii. p. 127; *Daud. Hist. Rain.* p. 9. pl. 33. f. 3, and *Rept.* viii. p. 190; *Merr. Tent.* p. 185; *Gravenh. Delic.* p. 59; *Tschudi, Batrach.* p. 88.

A bony ridge above and behind the ocular edge, forming together a right angle; first finger rather longer than second; paratoids oblong, elliptic; toes half-webbed; tarsus without cutaneous fold. Brownish olive, with a yellowish vertebral line; two dark brown transverse spots between the eyes; back and sides with dark brown spots; belly uniform whitish, or marbled with brown.

Var. A. **Bufo americanus,** (*Leconte, MSS.*) *Harlan, Journ. Acad. Nat. Sc. Philad.* v. p. 344; *Holbr. N. Amer. Herpet.* v. t. 4; *Dum. & Bibr.* p. 695.—Bony ridges moderate, not swollen behind.

a. Adult. Puerto Cabello. From Mr. Brandt's Collection.
b. Many specimens, half-grown and young. Brazil. Presented by Dr. Gardiner.
c. Young. Great Bear Lake. Presented by Sir J. Richardson.
d. Adult. N. America. Presented by Dr. J. Green, named by Mr. Holbrook.
e–h. Young. N. America. Presented by Edward Doubleday, Esq.
i–n. Adult and half-grown. N. America. Presented by Edward Doubleday, Esq.
o. Adult. America.
p. Adult. America.
q. Adult: not good state. America.
r. Young. America.
s, t. Very large. America. From Mr. Jamrach's Collection. Warts very large and spiny.

Var. B. **Bufo musicus,** *Harlan, Journ. Acad. Nat. Sc. Philad.* v. p. 344; *Dum. & Bibr.* p. 689; *Holbr. N. Amer. Herpet.* v. pl. 1.—Bony ridge swollen behind.

u. Adult. New York. From Mr. Brandt's Collection.
v–x. Half-grown and young. Lake Winnipeg. Presented by Sir J. Richardson.
y. Many specimens. N. America. Presented by Edward Doubleday, Esq.
z, α. Adult. N. America. Presented by Odo Russell, Esq.
β. Young: has been dried. N. America. Presented by Odo Russell, Esq.
γ. Half-grown. N. America.
δ. Adult. Mexico. From Mr. Cuming's Collection.
ε. Adult. America. Presented by the Zoological Society.
η. Adult. America.

16. Bufo leschenaultii.

Bufo leschenaultii, *Bibr. in Mus. Par.*; *Tschudi, Batrach.* p. 89; *Dum. & Bibr.* p. 666.

Crown without bony enlargement; muzzle truncated; paratoids subtriangular, large; toes nearly free; a tarsal cutaneous fold. Guiana.

17. Bufo ocellatus.

Crown rather flat, with two bony ridges, beginning from the snout, much divergent posteriorly, each bifid behind; snout rather pointed, protruding. Paratoids indistinct, not swollen; tympanum very distinct, much higher than broad. Above covered with numerous nearly equal warts, beneath granulated. Toes half-webbed; tarsus with two tubercles, without cutaneous fold. Back brown, with a narrow yellow vertebral line separating four or five pairs of black, yellow-edged spots; sides punctated with yellow; belly punctated with black.

a. Adult. Brazil. From M. Parzudaki's Collection.

18. Bufo ornatus.

Bufo ornatus, *Spix, Spec. Nov. Test.* t. 16. f. 1; *Gravenh. Delic.* p. 54; *Wied, Abbild.* tab. .
—— dorsalis, *Spix, l. c.* t. 17. f. 2; *Wied, Rec. Pl. Col.*
—— cinctus, *Wied, Beitr.* i. p. 564, and *Abbild.* tab. .
—— melanotis, *Dum. & Bibr.* p. 710.

Crown concave, with a bony enlargement round the upper and hinder edge of orbit; snout obtuse, rounded. Paratoids moderate, elongate, oval; tympanum very distinct. Toes half-webbed; tarsus with a series of small tubercles along the inner edge. A large brown oblique streak across the tympanum; back with a yellowish dorsal line, and a few pairs of brown spots on each side of it.

a. Adult. Rio de Janeiro. Presented by the Lords of the Admiralty.
b. Half-grown: bad state. Rio de Janeiro.
c. Half-grown. Para. Presented by R. Graham, Esq.
d. Half-grown. Para. Presented by R. Graham, Esq.
e. Half-grown. Brazil. Purchased of Dr. Gardiner.
f, *g*. Half-grown. Brazil. Presented by Lord Stuart.
h, *i*. Half-grown. Brazil. Presented by Lord Stuart.
k. Half-grown. Brazil. Presented by Lord Stuart.
l. Half-grown. Brazil. Presented by Lord Stuart.
m. Half-grown. Brazil. Presented by Lord Stuart.
n. Adult. Brazil. Presented by Lord Stuart.
o. Young: bad state. Brazil. Presented by Lord Stuart.
p. Adult. Brazil.
q. Adult: bad state. Puerto Cabello. From Mr. Brandt's Collection as *B. cinctus*.

r. Adult: bad state. Puerto Cabello. From Mr. Brandt's Collection.
s, *t*. Half-grown. Venezuela. From Mr. Dyson's Collection.
u–*x*. Adult and half-grown. S. America. Presented by Charles Darwin, Esq. (Named in the Paris Museum *Bufo melanotis*.)
y–*β*. Adult. S. America. Presented by Charles Darwin, Esq.
γ. Adult: stuffed. America. From Mr. Argent's Collection.

19. Bufo agua.

Seba, i. 76. 1.
Rana marina, *Linn. Syst. Nat.* i. p. 356; *Laur. Syn.* p. 31; *Daubent. Dict.* p. 624; *Lacép. Quadr. Ovip.* i. p. 539; *Bonnat. Encycl.* p. 6.
Bufo marinus, *Schneid. Hist. Amph.* p. 219; *Shaw, Zool.* iii. p. 155; *Merr. Tent.* p. 182; *Gravenh. Delic.* p. 54.
—— agua, *Latr. Rept.* ii. p. 13; *Daud. Rain.* p. 99. pl. 37, and *Rept.* viii. p. 209; *Cuv. Règne Anim.*; *Spix, Spec. Nov. Test.* p. 44. t. 15; *Wied, Reise nach Bras.* i. p. 52, ii. p. 241, and *Rec. Pl. Col.* pl. , and *Beitr.* i. p. 551; *Tschudi, Batrach.* p. 88; *Dum. & Bibr.* p. 703.
—— horridus, *Daud. Rain.* p. 97. pl. 36, and *Rept.* viii. p. 201.
—— humeralis, *Daud. Rept.* viii. p. 205.
Bombinator horridus, *Merr. Tent.* p. 179.
Bufo maculiventris, lazarus, stellatus, scaber, *Spix, l. c.*
—— ictericus, *Spix, l. c.*; *Gravenh. l. c.*

Crown concave, with a bony enlargement round the upper and hinder edge of orbit. Paratoids enormous, rhomboidal or oval, or elliptic. Toes half-webbed; tarsus with a cutaneous fold at the inner edge.

a. Adult. America.
b. Adult. America. Purchased.
c. Adult. America.
d. Adult. America. From Mr. Cuming's Collection.
e. Adult. America.
f. Adult. America.
g. Adult. S. America. From Mr. Bates's Collection.
h, *i*. Half-grown. Buenos Ayres. Presented by Charles Darwin, Esq. Paratoids very narrow, elongate.
k, *l*. Half-grown: skin. Brazil. Presented by Mrs. Parker.
m, *n*. Adult. Brazil.
o. Adult. Brazil. From Mr. Clausen's Collection.
p. Adult. Brazil. Presented by Lord Stuart.
q, *r*. Adult and half-grown. Brazil. Presented by Charles Darwin, Esq.
s. Adult. Bahia.
t. Adult. Rio de Janeiro. Presented by the Lords of the Admiralty.
u. Adult. Para. Presented by R. Graham, Esq.
v. Adult. Para. Presented by R. Graham, Esq.
w, *x*. Adult and half-grown. Para. Presented by R. Graham, Esq.
y. Half-grown. Para. From Mr. Stevens's Collection.

z. Very large specimen. Upper Essequibo. Presented by Sir R. Schomburgk.
a. Very large specimen. Demerara.
β. Adult. Demerara. Presented by Captain Sabine.
γ. Adult: stuffed. Demerara.
δ. Adult: female. Andes of Ecuador. From Mr. Fraser's Collection.
ε. Adult: male. Andes of Ecuador. From Mr. Fraser's Collection*.
ζ. Adult. Venezuela. From Mr. Dyson's Collection.
η. Adult. Venezuela. From Mr. Dyson's Collection.
θ. Adult. Venezuela. From Mr. Dyson's Collection.
ι. Adult. Venezuela. From Mr. Dyson's Collection. Olive, marbled with brown.
κ, *λ*. Half-grown and young. Vera Cruz. From Mr. Cuming's Collection.
μ. Large specimen. Mexico.
ν. Young: bad state. Mexico. From M. Sallé's Collection.
ξ. Adult. Jamaica.
o. Adult. Jamaica. Back with a few large, brown, black-edged spots.
π. Half-grown: skin. America. From Mr. Argent's Collection.
ρ. Adult: stuffed. America. From the Haslar Collection.
s. Adult: dried. America.
τ. Skeleton. S. America.
v. Skeleton. Brazil.

20. Bufo nebulifer.

Bufo granulosus, *Baird & Girard, Proc. Acad. Philad.* 1852, p. 173.
—— nebulifer, *Girard, l. c.* 1854, p. 87; *Hallow. ibid.* 1856, p. 308.

Crown very concave, on each side with a high ridge, beginning from the nostril, not confluent with that of the other side, bifid behind, one branch ending above the tympanum, and the other one on the occiput; edge of the upper jaw not dilated. Paratoids short, round, or triangular; tympanum very distinct. Toes half-webbed; tarsus without cutaneous fold. A vertebral line and a broader lateral band of yellowish-white colour; between the bifurcation of the two ridges a black streak across the crown; a few pairs of black spots along the vertebral line.

a. Adult. Vera Cruz. From Mr. Cuming's Collection.
b. Adult. Mexico. From Mr. Cuming's Collection as *B. hispidus*.
c. Adult: female. Mexico. From M. Sallé's Collection.
d. Half-grown. Mexico. From M. Sallé's Collection.
e. Adult. Texas.' From Mr. Cuming's Collection.
f. Adult. Central America. From Mr. Cuming's Collection.

* There cannot be the least doubt that these specimens from Guayaquil belong to the same species; the male is rather smaller, and exhibits all the warts covered with spines, whilst in the female only some of the warts exhibit a horny surface. Other male specimens in the Collection show the same peculiarity. In this species the size of the tympanum is subject to some variation in specimens from the same locality and with the same external characters.

21. Bufo peltocephalus.

Bufo peltocephalus, *Bibr. Mus. Paris*; *Tschudi, Batrach.* p. 89; *Bibr. in Ramon de la Sagra's Hist. île de Cuba, Rept.* pl. 30; *Dum. & Bibr.* p. 712.

Crown concave, an irregularly crenulated ridge above the orbit and along the canthus rostralis; snout obtuse, rounded. Paratoids moderate, oval or elliptical, obliquely situated. Toes half-webbed; tarsus with a cutaneous fold at the inner edge.

a–c. Adult and half-grown. Cuba. Presented by the Zoological Society.
d. Adult. Cuba.

22. Bufo d'orbignyi.

D'Orbigny, Voy. Amér. Mérid. t. 15. f. 5–7.
Bufo d'orbignyi, *Dum. & Bibr.* p. 697.

Crown on each side with a sharp bony ridge, Y-shaped posteriorly; edge of upper jaw dilated behind; first finger rather shorter than second; paratoids short, very small; toes half-webbed. Brownish olive, with indistinct darker spots, a yellowish vertebral line beginning from the snout; belly uniform whitish; crown without black cross-streak.

a–c. Adult and half-grown. Montevideo. Presented by Charles Darwin, Esq.
d. Adult. Montevideo.
e. Young. Chili. Presented by Charles Darwin, Esq.
f. Young. Rio Chupat. Presented by Charles Darwin, Esq.

23. Bufo granulosus. (Plate V. fig. A.)

Bufo granulosus, *Spix, Spec. Nov. Test.* t. 21. f. 2.
—— strumosus, pt., *Dum. & Bibr.* p. 716. (Exemplaires du Brésil, de la Guyane et de Cayenne, avec une série de petits tubercules le long du bord interne du tarse.)

Crown rather flat, not very concave, with a slight bony enlargement round the upper edge of eye; muzzle narrow, pointed, obliquely truncated, upper part prominent; groove before the eye not very deep. Paratoids moderate, subtriangular, not very prominent; tympanum distinct. Toes half-webbed; tarsus without cutaneous fold at the inner edge. Belly and breast uniform white.

a, *b*. Adult. Pernambuco. Presented by J. P. G. Smith, Esq.
c. Adult. Pernambuco. Presented by J. P. G. Smith, Esq.
d. Adult. South America. From Mr. Bates's Collection.
e–g. Half-grown. America.

24. Bufo gutturosus. (Plate V. fig. B.)

Bufo gutturosus, *Latr. Rept.* ii. p. 135.
—— gutturosus et strumosus, *Daud. Rain.* pl. 34. f. 2, and *Rept.* viii. p. 166.

Bombinator strumosus, *Merr. Tent.* p. 179.
Bufo strumosus, *Gravenh. Delic.* t. 9. f. 3.
—— strumosus, pt., *Dum. & Bibr.* p. 716. (Exemplaires des Antilles avec une saillie cutanée le long du bord interne du tarse.)

Crown very concave, with a bony enlargement round the upper edge of eye; muzzle narrow, pointed, rounded in front; a deep groove before the eye. Paratoids moderate, rounded behind; tympanum distinct. Toes two-thirds webbed; tarsus with a cutaneous fold at the inner edge. Under parts uniform whitish, throat sometimes dirty white.

a–c. Adult. St. Domingo. From Mr. Cuming's Collection.
d. Half-grown. St. Domingo. From Mr. Cuming's Collection.
e. Adult. St. Domingo.
f, g. Adult. Hayti. Presented by J. Hearne, Esq.

25. Bufo sternosignatus. (Plate V. fig. C.)

Crown rather flat, with a bony enlargement round the upper edge of the eye, in young individuals bifid behind, in adult forming a rather prominent ridge above the tympanum; muzzle narrow, pointed, vertically truncated in front; groove before the eye not very deep; tympanum distinct. Toes half-webbed; inner edge of metatarsus tubercular. Throat, breast and upper part of belly brown-spotted, more in young individuals; in the old ones a yellowish rectangular cross in the middle of the brown spots.

a, b. Adult. Venezuela. From Mr. Dyson's Collection.
c. Adult. Puerto Cabello. From Mr. Brandt's Collection.
d. Half-grown. Cordova. From M. Sallé's Collection.
e. Half-grown. Mexico. From M. Parzudaki's Collection.

Description.—This species is closely allied to the two preceding ones, but all the three may be easily distinguished from one another by the characters given above. As in the two other species, each canthus rostralis represents an arch, with the convexity bent inwards; the loreal region beneath is slightly grooved, so as to give to the muzzle a pointed appearance; it is vertically truncated in front, being rounded in *B. gutturosus*, and obliquely truncated with prominent upper part in *B. granulosus*. The crown is broad, rendered slightly concave by a bony enlargement running round the upper edge of the eye, and swollen into a prominent ridge above the tympanum; in young individuals another branch arises from behind the eye and is lost in front of the paratoid. The tympanum is very distinct, and at least one-half the size of the eye. The paratoid, being in young specimens more rounded and prominent, becomes subtriangular in old age. All the upper and lower parts are thickly covered with small spine-bearing warts; sometimes a series of rather larger ones may be distinguished running from behind the paratoid to the loin. The second and fourth fingers are nearly of the same length, the third much longer. The inner edge of the metatarsus is covered with spiny

tubercles, and nothing of a fold is to be seen. The toes are half-webbed; the third rather longer than the fifth. There are two small and blunt tubercles on the metatarsus. The system of the coloration of the upper parts is very similar to that of *Bufo ornatus*. Ground colour greyish brown or brown; a more or less distinct, uninterrupted yellowish line from the muzzle to the end of the coccygeal style; on both sides of it symmetrical reddish-brown markings, the most constant of which are a broad cross-band between the eyes, and two irregular blotches on the sacral region; arms and legs with a few cross-bands. The coloration of the lower parts appears to be a constant character: the throat, breast and upper part of belly are thickly covered with dark brown more or less confluent spots; these parts become lighter with age, but across the middle appears a white rectangular cross, the horizontal branches of which reach from one humeral joint to the other. Length of body 2″; length of anterior extremity $1\frac{1}{2}$″; length of posterior extremity $2\frac{1}{2}$″.

3. OTILOPHUS.

Head moderate, angular; muzzle distinct and pointed; crown on each side with an enormous, erect, sharp, bony ridge from the orbit to the paratoid (in adult specimens); on the side a large cutaneous fold. Teeth none in jaws nor in palate; eustachian tubes moderate. Tongue oval, entire, free behind. Tympanum more or less distinct; paratoids prominent; skin warty. Fingers four, free; toes five, half-webbed. Male with a single internal vocal sac. South America.

Otilophus, *Cuvier, Règne Anim.*; *Tschudi, Batr.* p. 89.
Bufo, sp., Rana, sp., *auct. cæter.*

1. Otilophus margaritifer.

Seba, i. 71. 6–9.
? Rana typhonia, *Linn. Syst. Nat.* i. p. 356; *Shaw, Zool.* iii. p. 159. pl. 45.
—— margaritifera, *Laur. Syn. Rept.* p. 30.
—— perlata, *Lacép. Quadr. Ovip.* i. p. 545; *Bonnat. Erpét.* p. 4.
Bufo typhonius, *Schneid. Hist. Amph.* p. 207; *Merr. Tent.* p. 181; *Gravenh. Delic.* p. 53.
—— nasutus, *Schneid. l. c.* p. 217; *Spix, Spec. Nov. Test.* p. 14. f. 3.
—— margaritifer, *Latr. Rept.* ii. p. 118; *Daud. Rain.* pl. 33. f. 1, and *Rept.* viii. p. 179; *Dum. & Bibr.* p. 718.
—— naricus, acutirostris, proboscideus, *Spix, l. c.* t. 14. f. 2, t. 21. f. 3, 4.
—— oxyrhynchus, *Wied, Rec. Pl. Col.*, and *Abbild.* t. .
Otilophus perlatus, *Cuv. Règne Anim.*
—— typhonius, *Tschudi, Batr.* p. 89.

Paratoids small; tarsus without cutaneous fold at the inner edge.

a. Adult: skeleton. Cayenne.
b. Adult. Tropical America. From Mr. Bates's Collection.
c. Half-grown: not good state. Tropical America.

d–f. Adult. Amazon. From Mr. Bates's Collection.
g. Adult. Para. Presented by R. Graham, Esq.
h–m. Half-grown. Para. From Mr. Stevens's Collection.
n, o. Half-grown. Para. From Mr. Stevens's Collection.
p. Adult. Andes of Ecuador. From Mr. Fraser's Collection.

The enormous ear-shaped bony plates, formed by the orbital edge of the parietal and temporal bones, are described by Cuvier. But there are moreover the neural spines of the third to the eighth vertebræ developed as in no other frog, being higher than the centrum of the vertebra, and slightly bifid behind. The bones of the front extremity are relatively more slender than in other toads; the ridge of the humerus is broad, in the femur absent. The iliac bones are short and far distant from one another, forming an angle of about 35°.

Second Series. OPISTHOGLOSSA PLATYDACTYLA.

Section I. Hylina.

O. PLATYDACTYLA with maxillary teeth and with the ear perfectly developed.

Fam. 1. POLYPEDATIDÆ.

HYLINA with webbed toes, cylindrical processes of sacral vertebra, and without paratoids.

Synopsis of the Genera.

1. **Acris.** Disks small. Toes broadly webbed; fingers free; tongue heart-shaped. North America.
2. **Hylarana.** Toes broadly webbed; fingers free; tongue deeply notched; vomerine teeth. East Indies; West Africa.
3. **Ixalus.** Tongue deeply notched; no vomerine teeth. East Indies.
4. **Polypedates.** Toes broadly webbed; fingers slightly webbed, none opposite to the others; tongue deeply notched; vomerine teeth. East Indies; Madagascar.
5. **Rhacophorus.** Fingers completely webbed. East Indian Islands.
6. **Cornufer.** Toes webbed only at the base; vomerine teeth; crown deeply concave. New Guinea; Java.
7. **Elosia.** Toes webbed only at the base; vomerine teeth; crown flat. Brazil.
8. **Chiromantis.** Two fingers opposite to the two other ones. Mozambique.
9. **Hyperolius.** No vomerine teeth; tongue heart-shaped. West and South Africa.

10. **Leptopelis.** Vomerine teeth. Disks large; fingers slightly webbed; toes broadly webbed; tongue heart-shaped. West Africa.

1. ACRIS*.

Vomerine teeth. Skin of back smooth, or slightly granular. Disks small; fingers free; toes broadly webbed. Tympanum indistinct; eustachian tubes small; tongue large, heart-shaped; male with an interior subgular sac. North America.

Acris, *Dum. & Bibr.* viii. p. 506.
Hylodes, sp., *Holbr. N. Amer. Herpet.* iv. p. 131.
Rana, sp., *auct. prior.*

1. Acris gryllus.

Bartram, Journ. p. 278.
Rana gryllus, *Leconte, Ann. Lyc. Nat. Hist. New York,* i. p. 282; *Harlan, Med. Phys. Res.* p. 104.
—— dorsalis, *Harlan, Med. Phys. Res.* p. 105.
Acris gryllus, *Dum. & Bibr.* p. 507.
Hylodes gryllus, *Holbr. l. c.* pl. 33.

Vomerine teeth in two groups, on a level with the hinder edge of the interior nostrils; crown with a large dark brown spot; sometimes with a dorsal band. Head elongated, pointed.

a. Many specimens. North America. Presented by Edward Doubleday, Esq.
b, c. Adult. North America. Presented by Edward Doubleday, Esq.
d–g. Adult and half-grown. Philadelphia. From Mr. Cuming's Collection.
h. Adult. South Carolina. Presented by R. Harlan, M.D. as *Rana dorsalis.*

2. Acris pickeringii.

Hylodes pickeringii, *Holbr. l. c.* pl. 34.

Head rather short; body yellowish brown, with small dusky rhomboidal spots and lines, sometimes arranged in the form of a cross. North America.

2. HYLARANA.

Vomerine teeth. Skin smooth, generally with two glandular folds. Disks rather small; fingers quite free, toes broadly webbed.

* This genus might belong to the family of Hylidæ. Bibron and also Baird describe the diapophyses of the sacral vertebra as not dilated; but I ask naturalists having the opportunity of examining *fresh* specimens, to direct their attention to this subject. The relation to *Pseudacris nigrita* is very great, which species also exhibits only slightly dilated processes.

Tympanum distinct; eustachian tubes moderate; tongue elongate, broader, free and deeply notched behind. Sacral vertebra not dilated. Males with an internal subgular vocal sac. East Indies; West Africa.

Limnodytes, *Dum. & Bibr.* viii. p. 510.
Hylarana, Polypedates, sp., *Tschudi, Batr.* p. 78.
Hyla, sp., *Schlegel, Abbild.* pp. 24, 57.

1. Hylarana macrodactyla. (Plate II. fig. C.)

Snout very much elongate, pointed; fourth toe two-thirds the length of body; toes half-webbed; on each side of back a narrow white glandular fold; a white vertebral line; a whitish streak along the upper lip.

a, *b*. Adult and half-grown. Hong Kong. Presented by J. C. Bowring, Esq.
c, *d*. Adult and half-grown. China. Presented by J. R. Reeves, Esq.
e. Half-grown. China.
f. Half-grown: bad state. China.

Description.—Habit very slender; head much elongate, with flat crown, rather rounded canthus rostralis, and long pointed muzzle; upper jaw reaching far beyond the lower one; loreal region grooved; nostril oval, lateral, just below the canthus rostralis, nearer the end of snout than the eye. Eye moderate, prominent; tympanum large, nearly the width of eye, just above the angle of mouth. Extremities slender, with small, rather indistinct disks; fingers quite free; the third much the longest, first and second nearly equal in length, the fourth rather longer; subarticular tubercles moderate; toes very long and slender, half-webbed, fourth much the longest, fifth longer than third; at the base of the first finger a tubercle, rather smaller than the subarticular ones. Skin quite smooth, only the hinder part of the under side of the thigh granular; a glandular fold from the back edge of eye along the sides of back. Cleft of mouth long; tongue large, very long, very deeply notched behind; palate very narrow; interior nostrils moderate, eustachian tubes rather larger; vomerine teeth in two oblique series, convergent posteriorly, between the inner nostrils. Above olive, with three parallel white stripes, one from the muzzle to the anus, and the two others along the glandular folds; some brown spots between; sides of body black-spotted; loreal region blackish, with a white streak from the end of snout passing between tympanum and angle of mouth; extremities above with irregular spots and streaks; under parts uniform yellowish. Length of body $1\frac{1}{2}''$; length of cleft of mouth $\frac{1}{2}''$; length of front extremity $\frac{2}{8}''$; length of hinder extremity $3''$; length of third finger $\frac{1}{2}''$; length of fourth toe $1\frac{1}{5}''$.

2. Hylarana erythræa.

Hyla erythræa, *Schlegel, Abbild.* t. 9. f. 3.
Hylarana erythræa, *Tschudi*, p. 78.
Limnodytes erythræus, *Dum. & Bibr.* p. 511. pl. 88. f. 1.

Snout moderately elongate, rather pointed; fourth toe half the length of body; toes nearly entirely webbed; on each side of back a narrow white glandular fold; a whitish streak along the upper lip (sometimes a white vertebral line).

a–c. Adult. Sumatra. From the Leyden Museum.
d, e. Adult and half-grown. Philippines.
f. Adult. Philippines.
g. Adult. San Christoval. From the Museum of Economic Geology. Belly black-spotted.

3. Hylarana chalconota.

Hyla chalconota, *Schleg. Abbild.* t. 9. f. 1.
Polypedates chalconotus, *Tschudi, Batr.* p. 76.
Limnodytes chalconotus, *Dum. & Bibr.* p. 513.

Snout moderately elongate, rather pointed; fourth toe half the length of body; toes nearly entirely webbed; on each side of back a broad glandular ridge; all upper parts uniform brownish; no streak on the upper lip.

a. Adult. Java. From the Leyden Museum.

4. Hylarana albolabris.

Hyla albolabris, *Hallowell, Proc. Ac. Nat. Sc. Philad.* 1856, p. 153.

Snout moderate; fourth toe nearly half the length of body; toes two-thirds webbed; on each side of back a narrow glandular fold; upper parts uniform blackish brown; a white streak along the upper lip.

a. Adult. Gaboon. From Mr. Cuming's Collection.
b. Adult. Gaboon. From Mr. Cuming's Collection.
c. Large specimen. Fernando Po. From Mr. Fraser's Collection.

5. Hylarana madagascariensis.

Limnodytes madagascariensis, *A. Dum. Mém. sur les Hylæf.* p. 155; *Dum. & Bibr.* ix. p. 401.

Inner face of the thighs glandular; no glandular fold on the back; a white vertebral band; a black spot on the loreal region and on the temple (*Duméril*).

3. IXALUS.

No vomerine teeth. No larger gland. Fingers quite free; toes more or less webbed. Tympanum distinct; eustachian tubes moderate; tongue elongate, free and deeply notched behind. Sacral vertebra not or very slightly dilated. Males with two (external) vocal sacs. East Indies.

Ixalus, *Dum. & Bibr.* viii. p. 523.
Orchestes, *Tschudi, Batr.* p. 76.
Hyla, sp., *Schlegel, Abbild.* p. 27.

1. Ixalus aurifasciatus.

Hyla aurifasciata, *Schleg. l. c.* t. 9. f. 4.
Orchestes aurifasciatus, *Tschudi, l. c.*
Ixalus aurifasciatus, *Dum. & Bibr. l. c.*

Toes not quite half-webbed; back with only a few scattered very small tubercles. Head black, with a yellowish cross-band. Back greyish, with two darker, broad, curved bands; legs with blackish cross-bands.

a. Adult. Java. From the Leyden Museum.
b. Adult: not good state. Java. From Mr. Parrey's Collection.
c, d. Adult male and female. Ceylon. From Mr. Cuming's Collection.

2. Ixalus variabilis. (Plate IV. fig. A. B.)

Disks of fingers rather large; skin of back quite smooth. Toes two-thirds webbed; above uniform or with reddish-grey spots; no cross-bands on the sides.

Var. A. Above uniform bluish grey; beneath whitish, on the sides and on the hinder parts of the thighs variegated with white (fig. A).

a. Adult female. Ceylon. From Mr. Cuming's Collection.
b-e. Adult and half-grown females. Ceylon. From Mr. Cuming's Collection.
f. Adult female: skeleton. Ceylon. From Mr. Cuming's Collection.
g. Adult female. Ceylon. From Mr. Cuming's Collection.
h. Adult. Ceylon. From Mr. Cuming's Collection.

Var. B. Above olive, with large brownish-grey, blackish-edged spots; a cross-band of the same colour between the eyes; extremities with cross-bands; no cross-band on the side; belly whitish (fig. B).

i. Adult female. Ceylon. From Mr. Cuming's Collection.

Var. C. Above olive, variegated with brown; a narrow white line from the muzzle to the anus; lower legs with obsolete transverse undulated lines; belly uniform whitish.

k. Adult female. Ceylon. From Mr. Cuming's Collection.

Description.—In habit similar to young specimens of *Polypedates maculatus*, but easily to be distinguished by the hidden tympanum, whilst on the other hand the vomerine teeth are rather difficult to be seen in young specimens of *P. maculatus*. Head broad, with flat crown, angular canthus rostralis, and with rather short muzzle; nostril round, on the canthus; eye large; tympanum covered by the skin, conspicuous in rather dried specimens, oval, one-fourth the width of eye. Disks rather large; subarticular tubercles moderate; fingers very slightly webbed; toes two-thirds webbed, third and fifth nearly equal in length, fourth not much longer. Skin quite smooth, only belly and hinder side of thigh granular; a cutaneous fold from the eye above the tympanum to the arm-pit. Transverse process of sacral vertebra with a slightly dilated cartilage at the outer end; tongue heart-shaped, deeply notched behind; interior nostrils round; eustachian tubes triangular, nearly equalling them in size. Length of body $1\frac{1}{2}''$; length of front extremity $1''$; length of hinder extremity $2\frac{1}{3}''$.

The skull is entirely ossified; the sutura coronalis quite obsolete; also the suprascapula exhibits no cartilaginous portions. Atlas without diapophyses, but they are present and nearly of the same strength in all the other vertebræ; those of the sacral vertebra are cylindrical and the strongest.

3. Ixalus leucorhinus.

Martens, in Nomencl. Rept. Mus. Zool. Berol. 1856, p. 36.

Toes not quite half-webbed. Yellowish brown with darker bands; a large six-sided white spot on the forehead; a streak from the muzzle to the hip. Ceylon.

4. Ixalus pœcilopleurus.

Martens, l. c.

Toes not quite half-webbed. Above greyish, darker marbled; beneath whitish, sides and extremities with oblique black cross-bands. Ceylon.

5. Ixalus natator. (Plate IV. fig. C.)

Disks of fingers rather large; toes entirely webbed; upper parts with very fine granulations. Ashy brown, either uniform or with rounded bluish-white spots.

Var. A. Back uniform brown.

a. Adult male. Philippines,

Var. B. Greyish brown with rounded bluish-white spots.

b, *c*. Adult male and female. Philippines.

Description.—Habit slender; head elongate, with narrow flat crown, broad forehead, angular canthus rostralis, and prominent

muzzle, rounded in front; loreal region concave; nostril prominent, oval, partly on the canthus rostralis, near the end of muzzle; eye very large; tympanum small, circular, about one-fifth of eye. Skin of the upper parts covered with very small granular tubercles; throat, chest, and under side of legs smooth; belly granular. Fingers slender, with broad elliptic disks and small subarticular tubercles, quite free; fourth longer than second, first with a thick swelling at the inner side. Toes moderate, with moderate disks and small subarticular tubercles, so broadly webbed that a part of the disks is in contact with the membrane; the fifth toe is hardly longer than the third, and reaches to the penultimate phalanx of the fourth; at the base of the first toe a very small tubercle. Cleft of mouth large; palate between the eyes very narrow, with a groove on each side; inner nostrils and eustachian tubes moderate; tongue elongate, broader, free and deeply notched behind. In the males on each side of the tongue near the angle of mouth, a moderate slit for the external vocal sacs, situated beneath the angle of mouth. Sacral vertebra not dilated. Length of body $1\frac{5}{8}''$; length of hinder extremity $3''$; length of front extremity $1\frac{1}{8}''$; length of fourth toe $\frac{3}{4}''$; length of third finger $\frac{3}{8}''$.

6. Ixalus guttatus. (Plate IV. fig. D.)

Disks of fingers rather large, toes entirely webbed; upper parts thickly covered with granular tubercles; muzzle rather elongate, pointed; brown above, with large dark brown spots.

a. Adult male. Borneo. From Mr. Lowe's Collection.

Description of the specimen.—Similar to the preceding species. Habit slender; head elongate, with rather convex crown and flat forehead; canthus rostralis angular, loreal region concave; muzzle prominent, with a rounded upper edge, and obliquely truncated in front; nostril prominent, oval, partly on the canthus rostralis, near the end of muzzle; eye very large; tympanum small, circular, about one-fifth of eye. Skin of the upper parts thickly covered with rather prominent tubercles, rather larger on the sides; throat, chest and under side of legs quite smooth, belly finely granular. Fingers slender, quite free, with large broad elliptical disks; fourth finger longer than second; first with a thick swelling at the inner side. Toes moderate, with moderate disks and small subarticular tubercles, as broadly webbed as in the preceding species; fifth toe conspicuously longer than third, reaching a little beyond the base of the penultimate phalanx of the fourth; metatarsus with two very small tubercles. Cleft of mouth large, longer than broad; palate between the eyes very narrow, with a groove on each side; inner nostrils and eustachian tubes moderate; tongue elongate, broader, free and deeply notched behind. Brown above, with large rounded, sometimes confluent, dark brown spots; legs with darker cross-bands; hinder sides blackish brown, with a few lighter small spots; web between the toes black. Length of body $1\frac{1}{4}''$; length of anterior extremity $\frac{3}{4}''$; length of posterior extremity $2\frac{1}{8}''$.

4. POLYPEDATES.

Vomerine teeth. Skin smooth, sometimes with tubercles. Disks large; membrane between the fingers short, in one species not conspicuous; toes broadly webbed. Tympanum distinct; eustachian tubes moderate; tongue large, broader, free and deeply notched behind. Males generally without vocal sac. Asia; Madagascar.

Polypedates, *Dum. & Bibr.* viii. p. 515.
Burgeria, Polypedates, Boophis, *Tschudi, Batr.* pp. 75, 76.
Hyla, sp., *Wiegmann, Gray, Schlegel.*

1. Polypedates microtympanum. (Plate VI. fig. A.)

Fingers very slightly webbed; vomerine teeth in two short oblique series between the inner nostrils. Skin of back nearly smooth; tympanum small, oval, one-third the width of eye; skin of head not adherent to the skull.

a. Adult female. Ceylon. From Mr. Cuming's Collection.
b. Adult female. Ceylon. From Mr. Cuming's Collection.
c. Half-grown male. Ceylon. From Mr. Cuming's Collection.
d, *e*. Young. Ceylon. From Mr. Cuming's Collection.
f. Adult. Madras. Presented by the Zoological Society.
g-k. Half-grown and adult. Ceylon. From Mr. Cuming's Collection.

Description.—Habit rather stouter than in *P. maculatus*. Head rather short, with broad flat crown, curved and angular canthus rostralis, and short rounded muzzle; loreal region somewhat grooved; nostril round, lateral, rather prominent, just below the canthus rostralis, nearer the end of muzzle than the eye. Eye moderate; tympanum small, oval, one-third the width of eye; extremities and disks moderate; second finger much longer than first, fourth much longer than second, third rather longer than fourth; fingers with a very slight lateral cutaneous fold, hardly webbed; subarticular tubercles very conspicuous; fifth toe as much longer than fourth as the disk is broad; toes half-webbed; a cutaneous fold reaching to the disk; subarticular tubercles very conspicuous; metatarsus with a slight tubercle. Skin of back nearly smooth, or with a few scattered small tubercles; skin of the side and of the under parts tubercular; upper eyelid with some tubercles; a glandular curved fold from the back edge of eye above the tympanum to the arm-pit. Cleft of mouth moderate; tongue oval, deeply notched behind; inner nostrils and eustachian tubes rather small; on each side of the palate a deep groove; vomerine teeth small, in two very short oblique series between the interior nostrils, with a large interval between. Colour above either nearly uniform bluish grey or olive, with regular black markings; a cross-band between the eyes; a broad band on each side of the back, with a large interspace between more divergent in front and behind; extremities with black points and large cross-bands; a black lateral streak beneath the canthus rostralis and along

the glandular fold; sides black-spotted; beneath yellowish, throat and chest finely dotted with black. In the specimen from Madras, the lateral dorsal bands are divided into rounded spots, and the membrane between the fingers and toes is broader, but the tympanum is as small as in the Ceylonese specimens. Length of body $2\frac{1}{3}''$ (adult female); length of hinder extremity $3\frac{1}{3}''$; length of front extremity $1\frac{3}{8}''$.

2. Polypedates maculatus.

Hyla maculata, *Gray, Ind. Zool.*
—— leucomystax, *Gravenh. Delic.* p. 26.
Polypedates leucomystax, *Tschudi, Batr.* p. 75; *Dum. & Bibr.* p. 519; *Kelaart, Prodr. Faun. Zeylan.* p. 193.
—— rugosus, part., *Dum. & Bibr.* p. 520.
—— cruciger, *Blyth, in Kelaart's Prodromus, App.* p. 48.

Fingers very slightly webbed. Vomerine teeth in two more or less oblique series, each beginning *from* the front angle of the interior nostrils. Skin of back smooth; tympanum nearly as large as eye; in adult specimens the skin of the hinder part of crown and of the forehead adherent to the skull, and rugose. Back with more or less brownish spots, or with two curved narrow lines, forming an X-shaped figure, and with a blackish stripe between the eyes; never with parallel bands.

The direction of the series of vomerine teeth is liable to great variation. There are specimens in the British Museum Collection exhibiting two very convergent series, which, prolonged, would form nearly a right angle; others exhibit the vomerine teeth arranged nearly in a straight line; most of our specimens are intermediate between these forms. No other character—neither of the form the head, nor of the extremities, nor the coloration, nor the difference of country—corresponds with these differences in the dentition.

a, *b*. Adult and half-grown. Ceylon. From Mr. Cuming's Collection.
c, *d*. Adult and half-grown. Ceylon. From Mr. Cuming's Collection.
e, *f*. Adult and half-grown. Ceylon. From Mr. Cuming's Collection.
g. Adult. Ceylon. From Mr. Cuming's Collection.
h. Adult. Ceylon. From Mr. Cuming's Collection.
i, *k*. Half-grown. Ceylon. From Mr. Cuming's Collection.
l, *m*. Half-grown. Ceylon. From Mr. Cuming's Collection.
n. Half-grown. Ceylon. From Mr. Cuming's Collection.
o. Half-grown. Ceylon. From Mr. Cuming's Collection.
p. Half-grown. Ceylon. From Mr. Cuming's Collection.
q. Half-grown. Ceylon. From Mr. Cuming's Collection.
r, *s*. Young. Ceylon. From Mr. Cuming's Collection.
t. Young. Ceylon. From Mr. Cuming's Collection.
u. Half-grown. Tenasserim. Presented by Dr. Packman.
v-*y*. Half-grown. Madras. Presented by J. C. Jerdon, Esq.
z, *a*. Adult. China.
β. Adult. China. Presented by J. Reeves, Esq.

γ-η. Adult and half-grown. China. Presented by J. Reeves, Esq.
θ, ι. Half-grown: discoloured. China. Presented by J. C. Bowring, Esq.
κ. Half-grown. China. From Mr. Cuming's Collection.
λ. Half-grown. Hong Kong. Presented by J. C. Bowring, Esq.
μ, ν. Adult. China.
ξ. Adult. Siam. Presented by J. C. Bowring, Esq.
o. Half-grown. Philippines.
π. Adult. East Indies.
ρ, s. Adult: bad state. East Indies.
τ. Half-grown. East Indies.
υ. Half-grown. East Indies.
ϕ. Half-grown: not good state. East Indies.
χ. Half-grown. East Indies. From Mr. Mather's Collection.
ψ. Half-grown. East Indies.
ω. Adult: stuffed. East Indies. From Mr. Argent's Collection.

3. Polypedates quadrilineatus.

Hyla quadrilineata, *Wiegm. Act. Ac. Cæs. Leop. Carol.* 1835, p. 260. t. 22. f. 1.
Polypedates rugosus, part., *Dum. & Bibr.* p. 520.

Fingers very slightly webbed. Vomerine teeth in two oblique series between the inner nostrils, each series beginning *near* the front angle of nostril. Skin of back smooth; tympanum nearly as large as eye; in adult specimens skin of the hinder part of crown and of the forehead adherent to the skull, and rugose. Above with four or six dark, parallel, longitudinal bands.

In this species the teeth are always in distinctly oblique series. As in the preceding species the skin of the head becomes rugose in old age, and is soft in younger individuals.

a-*c*. Adult and half-grown. Philippines.
d, *e*. Adult and half-grown: not good state. Philippines.
f. Adult: not good state. Philippines.
g-*k*. Adult. Java. From the Leyden Museum.
l, *m*. Adult and half-grown: not good state. Singapore.
n. Adult: not good state. East Indies. From Mr. Argent's Collection.
o. Adult. East Indies.
p. Half-grown: bleached. East Indies.
q, *r*. Half-grown. East Indies. From Mr. Bartlett's Collection.
s–*u*. Adult and half-grown: discoloured. East Indies. Presented by the Hon. E.I. Company.
v. Adult: skin. East Indies. From Mr. Argent's Collection.

4. Polypedates appendiculatus.

Fingers one-third webbed; vomerine teeth in two oblique series beginning from the inner front angle of nostril; cutaneous promi-

nences on the upper parts, beneath the anus and on the heel; forearm and metatarsus fringed. Tympanum round, half the width of eye. (Intermediate form between *Polypedates* and *Rhacophorus*.) Length of body $1\frac{3}{4}''$; length of hinder extremity $2\frac{7}{8}''$; length of front extremity $1\frac{1}{3}''$.

a. Philippine Islands.

5. Polypedates eques. (Plate VI. fig. B.)

Fingers very slightly webbed. Vomerine teeth between the inner nostrils in two rather oblique series. Snout pointed; keel with a cutaneous spur; tympanum elliptic, half the width of the eye; along the under-arm and tarsus a white cutaneous fold; a white band from the top of the snout to the base of the leg.

a. Half-grown male. Ceylon. From Mr. Cuming's Collection.
b-f. Adult. Ceylon. From Mr. Cuming's Collection.

Description.—Habit slender. Head depressed, triangular, with broad flat crown, angular canthus rostralis, and pointed muzzle; loreal region grooved; nostril round, lateral, just below the canthus, nearer the end of snout; eye large; tympanum elliptic, oblique, half as large as eye; a narrow glandular fold from the back edge of eye above the tympanum to the shoulder; upper parts quite smooth, under-side finely granular; anus surrounded by yellowish, rather prominent warts. Disks of fingers rather broad, of toes moderate; second finger shorter than fourth; membrane between the toes reaching to half the length of fourth toe, and to the disk of the four other ones; fifth toe hardly longer than the third; at the base of the first a small tubercle; subarticular tubercles moderate. Eustachian tubes larger than the inner nostrils; tongue pear-shaped, deeply notched behind; male with the usual slits on the sides of the tongue, and with two internal subgular vocal sacs beneath the angle of mouth. Above greyish, with a darker, large triangular spot, tapering on the shoulder, and again widening posteriorly; beneath the canthus rostralis an indistinct blackish-ash streak; a yellow line from the end of snout, along the margin of upper lip, beneath the tympanum to the base of leg; beneath uniform yellowish; hinder extremities with darker cross-bands. Length of body $1\frac{5}{8}''$; length of front extremity $1''$; length of hinder extremity $2\frac{1}{8}''$.

6. Polypedates bürgeri.

Hyla bürgeri, *Schleg. Faun. Japon.* t. 3. f. 7, 8.
Bürgeria subversicolor, *Tschudi, Batr.* p. 75.
Polypedates bürgeri, *Dum. & Bibr.* p. 521.

Fingers very slightly webbed. Vomerine teeth in a straight line on a level with the front edge of the inner nostrils, interrupted in the middle. Skin of back tubercular. Tympanum distinctly smaller than eye; crown not bony. Japan.

7. Polypedates schlegelii. (Plate VI. fig. C.)

Hylæ arboreæ var. japonicæ descript. pars *Schleg. in Fauna Japon.* p. 112 (individus à une taille beaucoup plus forte que chez nous—très vieux sujets—à toutes les parties supérieures d'un vert-pré uniforme, &c.), pl. 3. f. 5.

Fingers one-third webbed; vomerine teeth in two rather oblique series, beginning from the inner front angle of the interior nostrils; tongue deeply notched behind. Above uniform bluish green, sides of belly sometimes with small brown specks, beneath uniform whitish; head without band or spot. (See *Hyla viridis*, var. *japonica*.)

a, *b*. Adult and half-grown. Japan. From the Leyden Museum.
c. Adult. Japan. From the Leyden Museum.
All three with the name *Hyla viridis japonica*.

Description.—Habit intermediate between *Polypedates maculatus* and *Hyla viridis*. Head broad, with rather short muzzle, but not rounded canthus rostralis. A glandular fold from the back edge of eye above the tympanum to the shoulder. Tympanum circular, half the width of the eye, rather indistinct. Fingers one-third webbed, with moderate subarticular tubercles and rather broad disks; toes short, the fourth one-fourth or one-fifth longer than the fifth, the third as much longer than the fifth as its disk is broad; membrane broad, reaching the base of the disks, but deeply notched; subarticular tubercles moderate; metatarsus with a blunt tubercle; tarsus not fringed. Coloration as above mentioned. Tongue broader behind than in front, and deeply notched; interior nostrils moderate; vomerine teeth between the nostrils, in two rather oblique series, well separated on the middle of the palate, each beginning from the anterior front angle of nostril. Eustachian tubes moderate. Male with an internal vocal sac and the usual openings on the sides of the tongue. Diapophyses of the sacral vertebra cylindrical. Length of body $2\frac{1}{5}''$; length of hinder extremity $3\frac{1}{8}''$; length of tarsus $\frac{1}{2}''$; length of fourth toe $1''$; length of anterior extremity $1\frac{1}{3}''$.

8. Polypedates afghana.

Fingers quite free. Vomerine teeth in a straight line, on a level with the hinder edge of the inner nostrils, interrupted in the middle. Skin smooth; tympanum very small, as large as the disk of the finger; toes very broadly webbed to the disk.

a. Adult female. Afghanistan. Presented by Mr. Griffith.
b, *c*. Larvæ. Afghanistan. Presented by the East India Company.

To the above-mentioned characters may be added:—

Habit as in *P. maculatus*; snout angular, rather high; nostril on the canthus rostralis in the middle between the eye and top of snout; tympanum distant from the eye; inner nostrils moderate; eustachian tubes rather larger; disks rather large. Subarticular tubercles very conspicuous, oblong; metatarsus with a very small blunt tubercle. Above brown, variegated with greyish. Length of body $3''$; length of front extremity $2\frac{1}{3}''$; length of hinder one $6''$.

9. Polypedates goudotii.

Boophis goudotii, (*Bibr.*) *Tschudi, Batr.* p. 77.
Polypedates goudotii, *Dum. & Bibr.* p. 517.

Fingers very slightly webbed. Vomerine teeth in a straight line, on a level with the hinder edge of the inner nostrils, interrupted in the middle. Skin of back smooth; tympanum nearly as large as eye, immediately behind the eye; snout depressed in front; toes not entirely webbed, the last two phalanges of the fourth toe free. Madagascar.

Var. A. Above uniform brownish olive.

a, *b*. Adult.

Var. B. **variolosa**. Back with round white spots.

c. Adult.
d. Half-grown.

10. Polypedates junghuhnii.

Bleeker, Natuurk. Tydschr. Nederl. Indie, xi. p. 469.

Fingers very slightly webbed. Vomerine teeth in two small groups. Olive-green, marbled with darker, sides with dark green cross-bands; upper lip with a white band, interrupted behind the tympanum and forming two white spots. Java.

5. RHACOPHORUS.

Vomerine teeth in two distant series, on a level with the front edge of the inner nostrils. Skin smooth. Disks very large; fingers and toes entirely webbed. Tympanum distinct; eustachian tubes rather small; tongue large, elongate, free and deeply notched behind. Males with an internal subgular vocal sac. East Indian Islands.

Rhacophorus, *Kuhl, Isis*, 1827, p. 294; *Tschudi, Batr.* p. 73; *Dum. & Bibr.* viii. p. 530.
Hyla, sp., *Schlegel, Abbildg.* p. 32.
Hypsiboas, sp., *Wagl. Syst. Amph.* p. 200.

1. Rhacophorus reinwardtii.

Rhacophorus reinwardtii, *Boie, Mus. Lugd. Bat.*; *Tschudi, Batr.* p. 73; *Dum. & Bibr.* p. 532.
Hypsiboas reinwardtii, *Wagl. Amph.* p. 200.
Hyla reinwardtii, *Schleg. Abbild.* t. 30.

Above uniform olive (in spirits); membrane between the fingers and toes with a more or less distinct, large bluish-black spot. Vomerine teeth in a broadly interrupted straight line.

a, *b*. Adult. Batavia.
c. Adult. Java. From the Leyden Museum.
d. Adult. East Indies. From Mr. Bartlett's Collection.
e. Adult: bad state. East Indies. From Mr. Parrey's Collection.

2. Rhacophorus maximus.

? Rhacophorus reinwardtii, *Dum. & Bibr. Atlas*, pl. 89. f. 1, 1*a*.

Above uniform dark violet, beneath uniform brownish ; web without spots ; vomerine teeth in two slightly curved series, with a large interspace between.

a–c. Adult. Nepal. Presented by B. H. Hodgson, Esq.
d. Adult. Afghanistan.

This species agrees entirely in habit with *Rhacophorus reinwardtii*, but is distinguished by size and coloration. Crown of head quite flat and very broad ; tympanum half the size of eye ; the base of the inner finger appears to be very broad and flat ; after removing the skin, this proves to be the single flat phalanx of the thumb, as is also observed in *Rh. reinwardtii* ; the membranaceous folds of the edges of the extremities are rather less developed than in that species. Edge of lower jaw reddish white, this colour being continued to a short lateral streak below the tympanum. Length of body $3\frac{2}{3}''$; length of hinder extremity $6''$; length of anterior extremity $2\frac{3}{4}''$.

3. Rhacophorus pardalis. (Plate VI. fig. D.)

? Rhacophorus reinwardtii, *Voy. de la Bonite, Rept.* pl. 10. f. 1.

Above brownish olive with brown markings ; legs with brown cross-bands ; webs without black blotch. Vomerine teeth in two rather oblique and slightly curved series.

a, b. Adult and half-grown. Philippines.
c. Half-grown : not good state. Philippines.
d. Half-grown. Borneo.
e. Adult : not good state. Borneo. From Mr. Wallace's Collection.
f. Adult : very bad state. East Indies. From Mr. Frank's Collection.

This species, having a rather concave forehead and loreal region, exhibits some similarity of physiognomy with *Hyla pardalis*. The cutaneous appendages and folds of the extremities are as developed as in *Rh. reinwardtii*. There is a brown streak across the crown between the eyes ; between the shoulders a large oblong brown spot, with the four angles produced into points ; a third square blotch occupies the back behind the sacral vertebra ; some small irregular brown spots and points are scattered over all the upper parts. In one individual the sides are white, spotted with dark brown. All these markings are inconspicuous in one of the specimens from Borneo ; the belly appears to have been reticulated with brown, but the cross-bands on the legs are very conspicuous. I consider it to be a variety. Length of body $2\frac{1}{2}''$; length of hinder extremity $4''$; length of anterior extremity $1\frac{2}{3}''$.

6. CORNUFER.

Forehead flat; crown deeply concave. Vomerine teeth in two series. Disks moderate; fingers quite free; toes only webbed at the base. Tympanum distinct; eustachian tubes moderate; skin of back smooth; tongue large, circular, free and slightly notched behind.

Cornufer, *Tschudi, Batr.* p. 71; *Dum. & Bibr.* viii. p. 616.

1. Cornufer unicolor.

Tschudi, l. c.; *Dum. & Bibr.* viii. p. 617.

Above each eye a conical tubercle; uniform brown. New Guinea.

2. Cornufer dorsalis.

A. Duméril, Mém. sur les Hylæf. p. 174; *Dum. & Bibr.* ix. p. 408.

Head much elongate; a white streak along the back and the upper side of the hinder extremity. Java.

7. ELOSIA.

Head quite flat above with perpendicular sides, angular canthus rostralis, and obliquely truncated rounded muzzle. Vomerine teeth in two oblique series. Disks rather small, divided into two small disks above; fingers quite free; toes only webbed at the base. Tympanum distinct; eustachian tubes small; skin smooth. Tongue large, oval, entire, on all sides adherent. Male with an external vocal sac on each side beneath the angle of mouth. Brazil.

Elosia, *Tschudi, Batr.* p. 77; *Dum. & Bibr.* viii. p. 632.
Hyla, sp., *Lichtenstein.*

1. Elosia nasus.

Hyla nasus, *Lichtenstein, Verz. der Doubletten, Amph.* p. 106.
Elosia nasuta, *Tschudi, Batr.* p. 77; *Dum. & Bibr.* p. 633.

Brownish, marbled with brown.

a. Adult. South America. From M. Parzudaki's Collection.

8. CHIROMANTIS.

Vomerine teeth. Disks moderate; two outer fingers half-webbed and opposite to the two inner ones, which are provided with a membrane only at the base; toes entirely webbed. Tympanum distinct; eustachian tubes rather larger than the inner nostrils; tongue cordiform, free and notched behind. Male not with an external vocal sac. Tette and Sena.

Chiromantis, *Peters, in Wiegm. Archiv*, 1855, p. 56.

1. Chiromantis xerampelina.

Peters, l. c.

Sides with reddish-brown spots and bands.

9. HYPEROLIUS.

No vomerine teeth. Skin of back smooth or finely granular, sometimes with glandular folds. Disks moderate; fingers more or less slightly webbed; toes broadly webbed. Tympanum distinct or hidden; eustachian tubes moderate or small; tongue generally heart-shaped, with a nick behind. Upper arms and thighs generally without any colour. Males with an internal subgular vocal sac. Africa.

Hyperolius, *Rapp, in Erichson's Archiv*, 1842, p. 289; *Smith, Illustr. of the Zool. of S. Afr. Rept. App.* p. 26; *Peters, in Wiegm. Archiv*, 1855, p. 56.
Eucnemis, *Tschudi, Batr.* p. 76; *Dum. & Bibr.* viii. p. 525.

1. Hyperolius viridiflavus.

Eucnemis viridiflavus, *Dum. & Bibr.* p. 528.

Tympanum hidden; tongue heart-shaped; head short, muzzle obtuse. Above green, minutely dotted with yellow; beneath yellowish.

a. Adult: not good state. Abyssinia.
b. Adult: not good state. Senegal. Presented by T. Whitefield, Esq.

2. Hyperolius marmoratus.

Rapp, in Erichs. Archiv, 1842, p. 289. t. 6; *Smith, Ill. of S. Afr. App.* p. 26.
? *Bianconi, Spec. Zool. Moss. Rept.* t. 5. f. 3 *a* (without name).

Tongue heart-shaped; tympanum hidden; head short, muzzle blunt.

Var. A. Above brown, with irregular yellowish spots (*Rapp, l. c.* fig. 1).

a–c. Adult. South Africa.
d–g. Adult. Cape of Good Hope. Presented by the Rev. H. H. Methun.

Var. B. Above brown, with reticulated yellow lines (*Rapp, l. c.* fig. 2).

h. Adult. West Africa. From Mr. Fraser's Collection.

3. Hyperolius horstockii.

Hyla horstockii, *Schlegel, Abbild.* p. 24.
Eucnemis horstokii, *Tschudi, Batr.* p. 76.
—— horstookii, *Dum. & Bibr.* p. 529.

Tympanum hidden; tongue heart-shaped; head rather elongate.

Skin of back quite smooth. Above greyish; a light brown, above white-edged band from the snout through the eye.

a. Adult: not good state. South Africa. Presented by Sir J. Richardson.
b. Adult: bad state. South Africa. Presented by Sir J. Richardson.
c. Adult: not good state. Africa.
? *d*. Half-grown: bad state. Sine patria. From Mr. Frank's Collection as *Eucnemis dorsalis*.

4. **Hyperolius parallelus.** (Plate VIII. fig. A.)

Tympanum hidden; tongue heart-shaped, deeply notched behind; head short, muzzle blunt. Above blackish brown, with three white parallel bands; upper lip yellowish.

a. Adult. South Africa.
b, *c*. Adult and half-grown: not good state. Angola. From Mr. Rich's Collection.

Description.—In habit similar to *H. marmoratus*; extremities rather short; fingers slightly webbed, rather short; first shortest by far, third rather longer than fourth; toes short, four-fifths webbed, with very small subarticular tubercles, fourth rather longer than fifth; metatarsus with a very small tubercle. Skin of back and throat smooth, of belly granular. Above blackish brown with three white parallel bands—one dorsal from the muzzle to the anus, and another on each side from the upper eyelid to the loin; belly and upper lip yellowish; upper arm and thigh not coloured; remainder of the extremities greyish, black-dotted. Inner nares and eustachian tubes small; tympanum hidden; tongue short, broad, deeply notched behind. Size of *H. marmoratus*.

5. **Hyperolius guttulatus.** (Plate VII. fig. A.)

Tympanum hidden; fingers half-webbed; back smooth; head moderate, broad, muzzle rounded. Upper parts brown, finely white-dotted; thighs not coloured.

a. Adult. Africa. From Mr. Parrey's Collection.
b, *c*. Adult. Africa. From Mr. Frank's Collection.

Description.—Head broad, depressed, with flat crown and forehead, and moderate, rounded muzzle; canthus rostralis rather obsolete; eye moderate; tympanum hidden; extremities moderate, with moderate disks and rather small subarticular tubercles; fingers half-webbed; toes webbed to the penultimate phalanx, the third and fifth equal in length, the fourth rather longer; a very small tubercle at the base of the first toe. Skin quite smooth, belly granulated. Tongue cordiform, nicked behind; interior nostrils rather small. Upper parts brown, speckled with very small, round, dull yellowish points;

under parts whitish; loreal region brown with indistinct points; base of arm and thigh not coloured. Length of body $1\frac{1}{3}''$; length of front extremity $\frac{7}{8}''$; length of hinder extremity $2''$.

6. Hyperolius fornasinii.

Euchnemis fornasinii, *J. J. Bianconi, Spec. Zool. Mossamb. Rept.* t. 5. f. 1.

Hyperolius bivittatus, *Peters, Wiegm. Archiv*, 1855, p. 56.

Tympanum hidden; tongue heart-shaped; fingers half-webbed. Above reddish brown, finely dotted with white; on each side of back a white band punctulated with black, both confluent on the muzzle; thigh with another white band minutely dotted with black. Boror; Mozambique.

7. Hyperolius tæniatus.

Peters, l. c. p. 57.

Tympanum hidden; tongue oval, broader and deeply notched behind; fingers half-webbed. Above brownish grey, with four blackish-brown bands, confluent on the muzzle. Boror; Mozambique.

8. Hyperolius argus.

Peters, l. c.

Tympanum indistinct; fingers half-webbed. Brown, with round, lighter, black-edged spots; a yellow black-edged streak from the upper eyelid to the top of the snout. Boror; Mozambique.

9. Hyperolius flavoviridis.

Peters, l. c.

Tympanum distinct; tongue rhombic; head short, muzzle blunt; fingers half-webbed; a yellow black-edged streak from the upper eyelid to the nose; above greenish, beneath yellowish. Boror; Mozambique.

10. Hyperolius tettensis.

Peters, l. c.

Tympanum distinct; above green with black dots, beneath yellowish. Tette; Mozambique.

11. Hyperolius marginatus.

Peters, l. c.

Tympanum hidden; fingers half-webbed; head short, muzzle blunt. Above brownish grey; sides, arms, and lower legs with small black spots; thighs not coloured. Back smooth. Macanga; Mozambique.

12. Hyperolius modestus.

Eucnemis modestus, (*Schleg.*) *Nomenclat. Rept. Mus. Berol.* 1856, p. 36 (without description).

a. Adult: bad state. Gold Coast. From Mr. Parrey's Collection as *Eucnemis modestus*.

13. Hyperolius madagascariensis.

Eucnemis madagascariensis, *Dum. & Bibr.* p. 528.

Tympanum hidden; tongue rather rhombic, slightly nicked behind; head short, muzzle obtuse; above brown, extremities dotted with black; a black streak from the nostril to the eye; beneath whitish. Madagascar.

14. Hyperolius ocellatus. (Plate VII. fig. B.)

Tympanum hidden; toes broadly, fingers two-thirds webbed; crown flat; snout moderate, not short, muzzle rounded; tongue cordiform. All upper parts light reddish grey, with small rounded, black, white-edged spots; sides dark brown with white spots; under parts uniform whitish, edge of lower jaw marbled. Upper arm coloured; thigh not coloured, except a narrow brown streak on the upper side. Quite smooth; belly granular.

a. Adult. Fernando Po. From Mr. Fraser's Collection.
b. Half-grown: not good state. Angola. From Mr. Rich's Collection.

15. Hyperolius plicatus. (Plate VII. fig. C.)

Tympanum hidden; tongue cuneiform, broader and deeply notched behind; head rather elongate; back with two curved glandular folds.

a. Adult. Coast of Guinea. From Mr. Frank's Collection as *Rana oxyrhyncha*.

Description of the specimen.—Snout moderately elongate, rather pointed in front; crown quite flat, canthus rostralis angular, loreal region rather high. Extremities moderate: disks moderate; fingers quite free; first and second fingers nearly equal in length, but shorter than fourth; third longest by far; toes two-thirds webbed, with well-developed subarticular tubercles; fourth rather slender, longest by far; third a little longer than fifth; metatarsus with one small tubercle. Back with a few scattered small tubercles, and with a glandular fold on each side, reaching from the back edge of eye to the sacral region, both convergent on the back, behind the shoulders; belly quite smooth; throat finely granular. Inner nostrils and eustachian tubes small; tympanum hidden; tongue elongate, cuneiform, broader and deeply notched behind. Above brownish grey variegated with brown; between the eyes a brown spot, and a lighter cross-band in front; an oblique dark brown band from the back edge of the eye to the base of the arm; throat greyish, belly white, both with some small brown

spots; arms and legs with cross-bands; hinder side of under arm, of thigh, and of metatarsus, brown; above the brown streak of the thigh another whitish one. Length of body $1\frac{1}{3}''$; length of front extremity $\frac{7}{8}''$; length of hinder extremity $2\frac{1}{3}''$.

16. Hyperolius seychellensis.

Eucnemis seychellensis, *Tschudi, Batr.* p. 76; *Dum. & Bibr.* p. 527.

Tympanum small, distinct; tongue rather rhombic, nicked behind; fingers nearly half-webbed; above brown or greyish, marbled with brown. Seychelles.

17. Hyperolius? bicolor.

Eucnemis bicolor, *Gray, Zool. Misc.* p. 5.

"Blue in spirits; under side of body and limbs bluish white; the lips, chin, and a streak from under the eye, beneath the tympanum and along the side of the body to the groin, pure white. Back smooth. Belly and thighs granular; the fore toes scarcely webbed, the hinder ones webbed to the end; the toe-disks small. Tympanum distinct." *Gray, MSS.*

a. Bad state. Port Essington. From Mr. Gilbert's Collection. This species is very probably the type of a separate genus; but the condition of the single specimen does not enable me to give the characters with certainty.

10. LEPTOPELIS*.

Vomerine teeth. Skin of back smooth. Disks rather large; fingers slightly webbed, toes broadly webbed. Tympanum distinct; eustachian tubes moderate; tongue heart-shaped, slightly nicked behind. Male with an external subgular sac. Africa.

Hyla, sp., *Hallowell, A. Duméril.*

The species, for which I establish the above genus, was considered to be a species of *Hyla*, having the same external characters. But as this genus is represented in the Æthiopian region by *Hyperolius*, I was induced to make a closer examination, by which the difference in the structure of the diapophysis of the sacral vertebra was ascertained. From *Polypedates* it differs in the shape of the tongue.

1. Leptopelis aubryi.

Hyla punctata†, *Hallowell, Proc. Ac. Nat. Hist. Philad.* vii. p. 193.
Hyla aubryi, *A. Dum. in Revue et Mag. Zool.* 1856, p. 561.

Vomerine teeth between the nostrils. Brownish, with a darker triangular spot between the eyes; back with some irregular brown spots and a few very small yellow ones.

* λεπτὸς slender, narrow; πέλις pelvis.
† A name preoccupied more than fifty years ago.

a. Adult. Ashantee.
b. Adult. Gaboon. From M. Parzudaki's Collection.
c. Adult. Africa. From Mr. Frank's Collection as *Eucnemis bucephalus*.

Fam. 2. HYLODIDÆ.

Hylina with free toes, cylindrical processes of sacral vertebra, and without paratoids.

Synopsis of the Genera.

1. **Crossodactylus.** No vomerine teeth; tongue entirely adherent. Brazil.
2. **Phyllobates.** No vomerine teeth; tongue free behind. West Indies; Central America.
3. **Hylodes.** Vomerine teeth; tongue entire or slightly nicked behind. America.
4. **Platymantis.** Vomerine teeth; tongue deeply notched. Feejee and Philippine Islands.

1. CROSSODACTYLUS.

No vomerine teeth; fingers thin, rather depressed, quite free; disk convex beneath, flat and smooth above; toes free, fringed on both sides; outer edge of tarsus fringed with a free membrane. Tympanum distinct; skin smooth, with a few scattered small flat warts on the sides. Tongue oval, entirely adherent. Brazil.

Crossodactylus, *Dum. & Bibr.* viii. p. 635.

1. Crossodactylus gaudichaudii.

Dum. & Bibr. p. 635.

Olive; the upper part of the legs black-banded. Brazil.

2. PHYLLOBATES.

No vomerine teeth; fingers and toes rather depressed, quite free, not fringed, the dilated end above with a central longitudinal groove; tympanum distinct; eustachian tubes small; skin quite smooth; tongue large, free and entire, or slightly notched behind. West Indies; Central America.

Phyllobates, *Bibron, in Ramon de la Sagra's Hist. de l'Ile de Cuba, Rept.* pl. 29 *b*; *Dum. & Bibr.* viii. p. 637; *Girard, in U. S. Naval Astronom. Expedit.* p. 208.

1. Phyllobates bicolor.

Bibron, l. c.; *Dum. & Bibr.* p. 638.

Tongue slightly notched behind; first cuneiform bone indistinctly prominent; above fulvous, beneath dark brown. Cuba.

2. Phyllobates melanorrhinus.

Berthold, Neue Reptil. von Neu Granada, Dissert., Göttingen, 1846, p. 14. t. 1. f. 9.

Tongue entire behind; metatarsus without any prominence; above fulvous, beneath blackish; nose black. New Granada.

3. HYLODES.

Vomerine teeth. Skin smooth, or covered with small flat warts; no large gland. Disks small; fingers and toes free. Tympanum distinct; eustachian tubes small; tongue large, oval, entire or slightly notched behind. Males with an internal subgular vocal sac. America.

Cystignathus, sp., *Holbr. N. Amer. Herpet.* iv. p. 107.
Hylodes, *Fitz. Syst. Rept.* p. 31; *Tschudi, Batr.* p. 77; *Dum. & Bibr.* viii. p. 619.
Acris, sp., *Dum. & Bibr.* viii. p. 509.
Rana, sp., Bufo, sp., *auct. prior.*

1. Hylodes lineatus.

Rana lineata, *Schneid. Hist. Amph.* p. 138; *Gravenh. Delic.* p. 44. t. 8. f. 2.
—— fusca, *Schneid. l. c.* p. 130.
—— castanea, *Shaw, Zool.* iii. p. 128.
Bufo lineatus, *Daud. Rain.* p. 105, and *Rept.* viii. p. 188.
—— albonotatus, *Daud. Rept.* viii. p. 185.
Rana schneideri, *Merr. Tent.* p. 177.
Hylodes lineatus, *Dum. & Bibr.* p. 625.

Toes cylindrical at the tip, with prominent tubercles beneath; muzzle truncated in front; tongue rounded at each end, oval, broader and entire behind; vomerine teeth in two hardly interrupted, slightly arched series between and behind the inner nostrils. Above bluish black, with a white line on each side; extremities marbled with darker, and thighs with some large rose-coloured spots.

a–d. Adult and half-grown. St. Domingo. From M. Sallé's Collection.
e. Half-grown. St. Domingo.
f. Adult. Andes of Ecuador. From Mr. Fraser's Collection.
g–n. Adult and half-grown. Andes of Ecuador. From Mr. Fraser's Collection.

The specimens from the West Indies differ from those of the continent, and they will probably prove to be different species. The belly in the former is uniformly light-coloured, in the latter reddish brown with minute white specks. The vomerine teeth of the former are arranged in two long, very concave series, extending behind the interior nostrils, nearly to the side of the mouth. The vomerine teeth of the specimens from Ecuador are placed in two short, hardly convex series, not reaching to the posterior side of the nostril.

2. Hylodes martinicensis.

Eleutherodactylus martinicensis, *Bibr. MSS.*
Hylodes martinicensis, *Tschudi, Batr.* p. 77; *Dum. & Bibr.* p. 620.

Habit as in *Hyla arborea*. Back smooth; disks distinct; muzzle rather short, rounded in front; tongue large, rounded, slightly nicked behind; vomerine teeth in two well-separated, rather oblique series between the inner nostrils; a black streak along the canthus rostralis above the tympanum; loreal region olive; tympanum one-third or one-fourth of the eye.

a. Many specimens. St. Vincent's.
b. Adult. St. Domingo.
c. Half-grown. Barbadoes. From Mr. Cuming's Collection.

3. Hylodes ricordii.

Dum. & Bibr. Erpétol. génér. p. 623.

Back covered with small warts; tongue large, oblong, rounded at each end, broader and entire behind. Vomerine teeth in a zigzag row. Disks distinct. Cuba (*Dum. & Bibr.*).

a. Adult. St. Domingo.
b, c. Adult. St. Domingo. From M. Sallé's Collection.

4. Hylodes oxyrhynchus.

Dum. & Bibr. Erpétol. génér. p. 622.

Back smooth; muzzle pointed; tongue large, with an obtuse, slightly nicked angle behind. Vomerine teeth in a zigzag row; disks distinct. (*Dum. & Bibr.*)

Hab. —— ?

5. Hylodes laticeps.

A. Duméril, Catal. p. 178; *Dum. & Bibr.* ix. p. 408. pl. 99.

Head very large; muzzle obtuse, rounded; tympanum higher than long; sides grooved. Yucatan (Central America). (*Dum.*)

6. Hylodes conspicillatus.

Habit as in a half-grown *Rana esculenta*. Muzzle rather elongate and pointed. Vomerine teeth in two very oblique series, each beginning from the inner edge of the nostrils and reaching behind them; tongue with a very small nick behind; tympanum half the size of eye. Disks very conspicuous. Above brown, loreal region deep brown; a blackish streak between the eyes, another oblique one from the eye above the tympanum, and a third beneath the eye; back marbled with darker; extremities with a few blackish cross-bands; hinder side of the legs black, marbled with white; lower parts greyish white, marbled with brownish black.

a. Adult female: not good state. Andes of Ecuador. From Mr. Fraser's Collection.

Length of the body $1\frac{2}{3}''$; length of anterior extremity $1\frac{1}{6}''$; length of posterior extremity $3''$; length of fourth toe $\frac{5}{6}''$. The eggs are very large, half the size of a pea, and there are only sixteen in one-half of the ovarium.

7. Hylodes luteolus.

Litoria luteola, *Gosse, A Naturalist's Sojourn in Jamaica*, p. 366. pl. 7.

Disks of all the feet very small; fourth toe extremely long; head somewhat pointed; vomerine teeth arranged in two curved lines, whose convexity is forward, scarcely interrupted at their meeting angle; posterior half of tongue round and free. Colour pale buff, studded with minute dark specks, irregularly scattered, accumulated in the form of bands across the legs and thighs. A band of deep brown passes from the muzzle through the eye, and is lost about the middle of the side.

a. Adult: not good state. Jamaica. Presented by Mr. Gosse.
b. Adult: very bad state. Jamaica.
c. Adult. Jamaica. Presented by Captain Parry.
d. Adult: not good state. Jamaica.

8. Hylodes leptopus.

Batrachyla leptopus, *Bell, Zool. of the Beagle, Rept.* p. 43. pl. 18. f. 5.

Tongue free behind; vomerine teeth in two oblique groups between the interior nostrils; tympanum distinct, small, round; toes depressed, rather dilated, truncated and nicked at the tip; fingers slightly webbed at the base; toes very slightly webbed (?); hinder edge of the thigh with scattered glands.—*Bell.*

a. Very bad state. Valdivia. Presented by Charles Darwin, Esq. Neither the description of Professor Bell, nor what I myself could see in the badly preserved specimen, can justify the separation of this species as a different genus.

4. PLATYMANTIS*.

Vomerine teeth. Skin smooth, or with narrow folds; no large gland. Disks rather small; fingers and toes free. Tympanum distinct; eustachian tubes moderate; tongue large, free and deeply notched behind. Male without vocal sac. Feejee and Philippine Islands.

Hylodes, sp., *A. Duméril.*

1. Platymantis vitianus.

Hylodes vitianus, (*Bibr.*) *A. Dum. Ann. Sc. Nat.* 3 série, *Zool.* xix. p. 177; *Jacqu. & Guich. Rept. in Voy. au Pôle Sud par Dumont-d'Urville*, p. 26. pl. 1. f. 4, 4 A.

Vomerine teeth in two oblique series behind the inner nostrils.

* πλατὺς flat, and μάντις Tree-frog.

Skin quite smooth (olive in spirits), generally a whitish rounded spot on each shoulder (speckled with purplish red in life).

a–c. Adult and young. Feejee Islands. Presented by the Lords of the Admiralty.
d. Adult female: skeleton. Feejee Islands. Presented by the Lords of the Admiralty.
e. Adult. Feejee Islands. From the Museum of Economic Geology.
f. Adult. Sine patria. Voyage of the Herald.
g, *h*. Adult. Sine patria. Voyage of the Herald.
i. Adult. Sine patria. Voyage of the Herald.
k–m. Adult and half-grown. Sine patria. Voyage of the Herald.
n. Half-grown. Sine patria. Voyage of the Herald.
o. Half-grown. Sine patria. Voyage of the Herald. Disks very large: perhaps different.

Description.—In habit like *Polypedates maculatus*. Head moderate, with flat forehead, high muzzle, and rather angular canthus rostralis; nostril elliptical, just below the canthus rostralis near the end of snout. Eye large, prominent; tympanum circular, nearly half the width of eye; extremities moderate, with rather small disks and well-developed subarticular tubercles. Fingers and toes quite free; third finger longest, first and fourth equal, second shortest; carpus with three blunt tubercles. Toes fringed with a hardly conspicuous cutaneous fold; fourth toe longest by far, third longer than fifth; first with a small blunt tubercle at the base. Skin smooth, hinder side of thighs rather granular; a small fold above the tympanum. Cleft of mouth broad; tongue large, tapering in front, free and deeply forked behind; palate very narrow; inner nostrils and eustachian tubes moderate. Vomerine teeth in two rather short, widely interrupted oblique series, each beginning near the hinder interior angle of the nostril, and convergent towards behind. In the single male individual in our Collection, neither a vocal sac nor a slit on the side of the tongue is to be found. Above (in spirits) more or less uniform blackish ash, lighter (in two specimens purplish red) dotted and marbled; generally on each shoulder a white spot; beneath dull yellowish, throat marbled with brown. Length of body $3\frac{1}{2}''$; length of front extremity $2\frac{1}{4}''$; length of hinder extremity $5\frac{1}{2}''$.

The *skeleton* is distinguished by the firmness of its structure, joined with a proportional slenderness of all the parts. Several portions of the skull are not ossified: there is one fonticulus between the parietal and frontal bones, whilst at the same place in *Cystignathus*, an ossified part of the capsula cerebri interior forms a large os intercalare, separating widely the parietal bones from the frontals, and the latter from one another. The sides of the cranium exhibit a large ossified plate in the anterior half, but are fibro-cartilaginous in the posterior. The determination of the single bones between the petrosal and maxillary joint is rather difficult, the os tympanicum being separated into a superior and inferior part: the superior part emits the processus mastoideus, curved, but not reaching the upper maxillary bone, and another process directed towards the joint, and united by sutures with

the inferior part of the tympanic and with the malar; this process approaches the joint, without being in connexion with it; the os pterygoideum appears to be entirely separated from the tympanic, if looked at from above, but both are united beneath without any visible suture. Thus also the malar is partly united with the tympanic bone. The parietals are relatively very narrow, not quite half as broad as the frontals, leaving a great space for the united temporal and orbital grooves; they have an irregularly serrated and truncated front edge, and a pair of spinous prominences behind for the insertion of muscles of the neck. The frontals are the largest bones of the whole skull, subtriangular, with a flat smooth surface; the two upper ridges of the occipital bones are very prominent, obliquely situated; petrosal conspicuously separated by sutures. The palatine bones are elongate, as generally, but without a sharp ridge. The diapophyses of the seven middle vertebræ do not differ very much from one another, either in length or in direction; those of the third and eighth are nearly horizontal; those of the ninth vertebra are very thick, trihedral, with rounded ridges; the coccygeal style is provided with a rather high ridge, and equal in length to the vertebral column, formed by the eight posterior vertebræ. The clavicula styliform, much weaker than the ossa coracoidea, which, much dilated at the inner end, form a long suture and give much firmness to the thorax; the processus xiphoideus, much dilated in front, less behind, is formed by a single bone, and has a broad half-ossified cartilage behind; the manubrium sterni styliform, and bifid behind for the articulation with the clavicles; supra-scapula broad, half-ossified; humerus not much longer than fore-arm, with a moderate ridge near its head; the iliac bones are rather broad, channel-shaped, with the concavity bent inwards, both nearly parallel to one another; femur cylindrical, without ridge, rather shorter than the crus; the first cuneiform bone very small.

The *intestines* exhibit no peculiarity, except the liver, both halves of which are nearly entirely separated from one another: an exceedingly narrow band of the parenchyma passes behind the heart, uniting both halves. The gall-bladder is small, not immediately attached to the parenchyma, but suspended by a fold of the peritoneum.

2. **Platymantis plicifera.** (Plate VIII. fig. B.)

Vomerine teeth in two oblique groups behind the level of the hinder edge of the nostrils. Skin of back with narrow folds. Sides of head blackish.

a, *b*. Adult and half-grown. Philippines.
c, *d*. Adult and half-grown. Philippines. From Mr. Cuming's Collection.

Description.—In habit similar to the preceding species; eye moderate; tympanum more than half the width of eye. Disks small; subarticular tubercles very prominent; fingers quite free;

first and third longest, nearly equal in length; the second rather longer than the fourth. Toes quite free, with a very slight fold at the edges; fourth longest by far; third rather longer than fifth; metatarsus with two small blunt tubercles. Skin granulated, with symmetrical longitudinal folds on the back; a prominent glandular fold from the back edge of eye above the tympanum to the arm-pit; tongue elongate, heart-shaped, free and deeply notched behind; interior nostrils and eustachian tubes rather small; vomerine teeth in two rather elongate and oblique groups, somewhat behind the level of the hinder edge of the nostrils. Above brownish or olive; back irregularly variegated with darker; between the eyes a blackish spot, in front of which a lighter one; sides of head beneath the canthus rostralis and the glandular fold blackish; extremities with darker cross-bands; hinder side of the thighs dark brown; under parts dull yellowish; throat speckled with brown. Length of body $1\frac{3}{4}''$; length of front extremity $1\frac{1}{4}''$; length of hinder extremity $3''$.

Fam. 3. HYLIDÆ.

Hylina with webbed toes, dilated processes of sacral vertebra, and without paratoids.

Synopsis of the Genera.

1. **Litoria.** First finger opposite to the three others. Australia.
2. **Pseudacris.** Toes slightly webbed at the base; web wanting between the two inner toes.
3. **Hyla.** Head covered with soft skin; no finger opposite to the three others; toes all webbed; no pouch on the back of the female. Cosmopolitan.
4. **Nototrema.** Head covered with soft skin; female with a pouch on the back. Central America.
5. **Notodelphys.** Head above bony; female with a pouch on the back. Peru; Mexico.
6. **Trachycephalus.** Head above bony; no pouch on the back of the female. West Indies; South America.

1. LITORIA.

Vomerine teeth; skin of back smooth, or with plaits; disks very small; fingers very slightly webbed, the first opposite to the three others; toes half-webbed; tympanum distinct; eustachian tubes small; tongue broad, elliptic, entire or slightly notched behind; males with a subgular vocal sac. Australia.

Litoria*, *Tschudi, Batr.* p. 77; *Dum. & Bibr.* viii. p. 503.
Pelodytes, sp., *Gray, Zool. Misc.* p. 56.

* Litoria glandulosa, *Bell, Zool. of the Beagle*, p. 42. pl. 18. f. 4, was founded upon a specimen, now in the Collection of the British Museum, from Concepcion

1. Litoria freycineti.

Litoria freycineti, (*Bibr. MSS.*) *Tschudi, Batr.* p. 77; *Dum. & Bibr.* p. 504. pl. 88. f. 2.
Pelodytes affinis, *Gray, Zool. Misc.* p. 56.

Snout moderate; back nearly smooth; nostril in the middle between the eye and the top of snout.

a. Port Essington. From Mr. Gilbert's Collection.

2. Litoria nasuta.

Pelodytes nasutus, *Gray, Zool. Misc.* p. 56.

Snout pointed; back with short longitudinal plaits; nostril nearer the top of snout than the eye.

a. Adult female. Port Essington. From Mr. Gilbert's Collection.
b. Adult male. Port Essington. Presented by the Earl of Derby.
c. Half-grown. Australia. Presented by Sir J. Richardson.

2. PSEUDACRIS.

Vomerine teeth. Skin of back smooth. Disks very small; fingers quite free, none opposite to the others; toes webbed at the base, no web between the two inner ones. Tympanum distinct; eustachian tubes moderate; tongue oval, slightly nicked behind. Male with internal vocal sac. North America.

Chlorophilus, *Baird, Proc. Ac. Nat. Sc. Philad.* 1854, p. 60.
Pseudacris, *Fitz. Syst. Rept.* p. 31.
Cystignathus, sp., *Holbr. N. Amer. Herpetol.* iv. p. 107.
Acris, sp., *Dum. & Bibr.* viii. p. 509.
Rana, sp., *auct. prior.*

1. Pseudacris nigrita.

Rana nigrita, *Leconte, Ann. Lyc. Nat. Hist. New York*, i. p. 282; *Harlan, Med. Phys. Res.* p. 105, and *Journ. Ac. Nat. Sc. Philad.* v. p. 341.
Acris nigrita, *Dum. & Bibr.* p. 509.
Cystignathus nigritus, *Holbr. N. Amer. Herpet.* iv. p. 107. pl. 26.
Baird, Proc. Ac. Nat. Sc. Philad. 1054, p. 60.

Skin of back smooth; vomerine teeth in two rather oblique series on the level of the hinder edge of the inner nostrils. Snout rather prominent beyond the lower jaw. Blackish ash, with three or five darker, sometimes interrupted longitudinal bands; a black streak passing through the eye above the tympanum; upper lip with a whitish streak.

a. Adult. Georgia. From Mr. Cuming's Collection.
b. Adult. Great Bear Lake. Presented by Sir J. Richardson.

(Chili), presented by Charles Darwin, Esq. The specimen apparently was in a state of decay before it was put in spirits; it belongs to a species of Cystignathus, in too bad a condition to be determined, and the glands on the hinder side of the thighs are merely the cysts of a parasitic animal.

3. HYLA.

Vomerine teeth. Skin smooth, or with scattered small tubercles; no large gland. Disks always very conspicuous; fingers more or less webbed, in some species quite free; toes broadly webbed, in one species only with a narrow membrane at the base. Tympanum distinct; eustachian tubes always very conspicuous; tongue large, more or less circular, entire or slightly notched behind. Males with one or two vocal sacs (except in one species). Cosmopolitan.

Hyla, Lophopus, Centrotelma, Hylomedusa, *Burmeister, Erläuterungen zur Fauna Brasiliens*, p. 90.
Hyla, *Bell, Zool. of the Beagle, Rept.* p. 43.
Hyla, *Dum. & Bibr.* viii. p. 542; *Gray, l. c.*; *Cuv. Règne Anim.*; *Laur. Syn. Rept.* p. 32; *Daud. Hist. Nat. Rain. Gren. Crap.*, and *Hist. Nat. Rept.* viii.
Dendrohyas, Hypsiboas, Lophopus, Calamita, Ranoidea, Sphænorhynchus, *Tschudi, Batr.* p. 71–74.
Calamites, Hypsiboas, Auletris, Hyas, Scinax, Phyllodytes, *Wagl. Syst. Amph.* p. 200–202.
Calamita, sp., Rana, sp., *auct. prior.*

* *Group with vomerine teeth in two curved, more or less separated series, forming together an arch with the convexity towards the front.* (⌒)

1. Hyla albomarginata.

Hyla albomarginata, *Spix, Test.* t. 8. f. 1; *Dum. & Bibr.* p. 555.
Hypsiboas albomarginata, *Wagl. Syst. Amph.* p. 201; *Tschudi, Batr.* p. 72; *Guichenot, Rept. in Castelnau's Anim. nouv. ou rares*, p. 82.
? Hyla infulata, *Wied, Beitr.* i. p. 533, and *Abbild.* t. ; *Burmeister, l. c.* p. 97. t. 30. f. 1–6.

The three outer fingers nearly entirely webbed. Skin smooth; head short. Minutely punctulated with brown; a white glandular fold passing above the eye.

a. Adult. Rio Janeiro. Presented by A. Fry, Esq.
b. Adult. Para.
c–g. Adult and half-grown. Brazil. Presented by Lord Stuart.
h. Half-grown. Brazil.
i. Half-grown. Brazil. From Dr. Gardiner's Collection.
k, l. Young. Brazil. From Dr. Gardiner's Collection.
m. Young: discoloured. Brazil. Presented by Lord Stuart.
n. Adult. South America. Presented by Charles Darwin, Esq.
o. Half-grown: discoloured. South America.

2. Hyla langsdorfii.

Hyla langsdorfii, *Dum. & Bibr. Erpét. Génér.* viii. p. 557; *Guichenot, l. c.* pl. 17. f. 1.
Centrotelma langsdorfii, *Burmeister, l. c.* p. 100.

The three outer fingers nearly entirely webbed. Skin minutely granular; head large, with angular muzzle. Brownish, with whitish and brown variegations; in old age more uniform.

a. Large specimen: male: not good state. South America. Presented by Sir R. Schomburgk.
b. Adult female: bad state. South America. From Mr. Mather's Collection.
c. Adult. Rio Janeiro. Presented by Alex. Fry, Esq.
d. Adult: discoloured. South America.

3. Hyla geographica.

Hyla geographica, *Spix, Spec. Nov. Test.* t. 11. f. 1; *Burmeister, l. c.* p. 99.

The three outer fingers half-webbed; skin smooth; head broad, with prominent angular muzzle; a conspicuous appendix at the heel. Reddish brown above, with black spots. An X-shaped marking on the anterior part of back.

a. Adult. Brazil.
b. Adult. Brazil.
c. Adult: bad state. Demerara. Presented by Dr. Hancock.
d. Adult. South America. From Mr. Parrey's Collection.
e, f. Adult. Venezuela. From Mr. Dyson's Collection.

4. Hyla pardalis.

Hyla pardalis, *Spix, Test.* pl. 8. f. 3.
—— crepitans, *Wied, Abbild.* t. .
Hylæ palmatæ descript. pars, *Dum. & Bibr.* p. 545 (p. 547: Les flancs d'autres individus et le devant de leurs cuisses portent des raies verticales noirâtres).
Hylomedusa crepitans, *Burmeister, l. c.* p. 103.

Fingers one-third webbed; head broad, short; tongue nearly circular; subarticular tubercles prominent. Reddish grey above, with irregular blotches, formed by minute black points; sides of body and hinder part of the legs with transverse black stripes. (Perhaps only a variety of *H. maxima*.)

a. Adult: not good state. Demerara. Presented by Dr. Hancock.
b. Adult: not good state. Berbice.
c. Adult. Caraccas. From M. Parzudaki's Collection as Trachycephalus marmoratus.
d. Adult. Venezuela. From Mr. Dyson's Collection.
e, f. Adult. Venezuela. From Mr. Dyson's Collection.
g. Young. Venezuela. From Mr. Dyson's Collection.
h. Adult: stuffed. South America. From M. Parzudaki's Collection.
i. Adult: stuffed. South America. From M. Parzudaki's Collection.

5. Hyla maxima.

Seba, i. 72. 3.
Rana maxima, *Laur. Syn. Rept.* p. 32.
Rana palmata, *Daub. Quadr. Ovip.* p. 659; *Lacép. Quadr. Ovip.* i. p. 538; *Bonnat. Ophiol.* pl. 3. f. 1.
Calamita maxima, *Schneid. Hist. Amph.* p. 163.

Rana zebra, *Shaw, Zool.* iii. p. 123.
Hyla palmata, *Latr. Rept.* ii. p. 173; *Daud. Rain.* p. 38. pl. 14, and *Rept.* viii. p. 79; *Cuv. Règne Anim.*; *Dum. & Bibr.* p. 544 (part.); *Guichenot, Rept. in Castelnau's Anim. nouv. ou rares,* p. 80.
Calamita palmatus, *Merr. Tent.* p. 173.
Hyla faber, *Wied, Reise nach Bras.* i. p. 173, ii. pp. 241, 249, and *Abbild.* f. 1, 2, and *Beitr.* i. p. 519; *Gravenh. Delic.* p. 23.
Hypsiboas palmata, *Wagl. Syst.* p. 201; *Tschudi, Batr.* p. 73.
Hylomedusa palmata, *Burmeister, l. c.* p. 102.

The three outer fingers half-webbed. Skin smooth; head short, large. Greyish or olive above, with or without more or less confluent darker spots, with or without dark-brown vertebral line.

a. Adult. Brazil.
b. Adult male. South America.
c. Half-grown: not good state. South America. From Mr. Bates's Collection. All with brown dorsal streak.

6. Hyla xerophylla.

Dum. & Bibr. Erpétol. Génér. p. 549.

The three outer fingers one-third webbed; head short; eyelid flaccid; tympanum rather more than half the width of eye; loreal region not grooved. Above and beneath brownish, with a few scattered small white spots.

a. Adult: not good state. Cayenne.
b. Half-grown: not good state. Para. From Mr. Stevens's Collection.

7. Hyla fasciata. (Plate VII. fig. D.)

Fingers scarcely webbed; a small cutaneous spur at the heel; head rather short, with pointed snout, grooved loreal region, and with a rather curved canthus rostralis; tympanum oval, not quite half the size of the eye. Back reddish olive-grey (in spirits), with a blackish vertebral line from the muzzle; sides of belly, anterior and posterior sides of the hind leg with alternate black and white cross-bars.

a. Adult female. Andes of Ecuador. From Mr. Fraser's Collection.

Description of the specimen.—This species has the physiognomy of *H. geographica, pardalis, maxima,* and *langsdorfii*, but is distinguished by the very short web between the fingers, the small tympanum, the coloration, and the small size. The tympanum is half the size of the eye, rather indistinct, obliquely elliptical; there is a very narrow and low fold along the fore-arm and the tarsus, the latter being provided with a small appendage at the heel. The web between the toes is deeply notched, and reaches only to the second phalanx of the first to fourth toe. The coloration is as above described, the black and white bars being nearly of the same width. There are visible also some such bars on the upper side of the foot. Length of the body 2″; length of front extremity $1\frac{1}{3}$″; length of hinder extremity $3\frac{1}{3}$″.

8. Hyla doumercii.

Dum. & Bibr. Erpétol. Génér. p. 551.

Fingers very slightly webbed; head short; tympanum large; loreal region not grooved. Above uniform dark olive, beneath whitish. Surinam.

9. Hyla punctata.

Calamita punctata, *Schneid. Hist. Amph.* p. 170.
Hyla punctata, *Daud. Rain.* p. 41, and *Rept.* viii. p. 81; *Gravenh. Delic.* p. 30. t. 6. f. 2; *Dum. & Bibr.* p. 552; *Burmeister, l. c.* p. 104.
Hyla variolosa, *Spix, Spec. Nov. Test.* t. 9. f. 4.

Fingers very slightly webbed; head short; tympanum not quite half the width of eye; eyelid tense; loreal region not grooved. Above light brown, on each side a white stripe, and back with white spots. Brazil (North); Surinam.

10. Hyla leprieurii.

Dum. & Bibr. Erpétol. Génér. p. 553.

The three outer fingers one-third webbed; head short; loreal region concave. Above greyish, with large brown-cross bands; beneath white. South America.

11. Hyla multifasciata. (Plate VIII. fig. D.)

Fingers very slightly webbed; head as long as broad; loreal region flat; skin smooth; all upper parts with brown, white-edged cross-bands; beneath white.

a. Adult. Para. From Mr. Stevens's Collection.

Description of the specimen.—Habit slender; head rather large, as long as broad, with rather pointed muzzle and not rounded canthus rostralis; loreal region flat, not grooved; eyes rather large; nostrils lateral, near the end of muzzle; tympanum oval, half the width of eye; upper parts and throat quite smooth; legs slender; metatarsus with one small tubercle; toes broadly webbed, but the membrane not reaching the tip of the toes; third toe nearly as long as fifth; fourth one-fourth longer than fifth; tarsus with a low cutaneous fold; fingers slender, very slightly webbed. Disks moderate. Tongue cordiform, but very slightly notched behind; vomerine teeth between the interior nostrils, arranged in two curved lines, forming together an arch with the convexity forward; interior nostrils rather large, eustachian tubes much smaller. Above light reddish brown; body from the snout to the anus, and the extremities with brown, white-edged cross-bands; loreal region brown, a brown line from the back edge of eye above the tympanum. Length of body $1\frac{7}{8}''$; length of hinder extremity $3''$; length of front extremity $1\frac{1}{4}''$; length of tarsus $\frac{5}{8}''$.

12. Hyla boans.

Hyla boans, *Daud. Rain.* p. 31. pl. 11, and *Rept.* viii. p. 64; *Latr. Rept.* ii. p. 184; *Dum. & Bibr.* p. 605; *Burmeister, l. c.* p. 108.
Auletris boans, *Wagl. Syst.* p. 201.
Hypsiboas boans, *Tschudi, Batr.* p. 72.

The three outer fingers very slightly webbed; head elongate; snout tapering, but rounded in front; tongue slightly notched behind. A brown dorsal stripe and a brown band through the nostril, eye, and tympanum; brown cross-streaks on the back and legs. South America.

** *Group with vomerine teeth in two curved series, each forming an arch, one beside the other, whose convexity is forward.* (⌒⌒)

13. Hyla levaillantii.

Dum. & Bibr. Erpétol. Génér. p. 550.

Vomerine teeth between the hinder edges of the inner nostrils; tympanum two-thirds the width of eye; fingers very slightly webbed; above brownish. Surinam.

14. Hyla lichenosa. (Plate VIII. fig. C.)

Vomerine teeth on a level with the hinder edges of the inner nostrils; tympanum one-third the width of eye; skin covered with large flat warts; fingers one-fourth webbed.

a. Adult male. South America. From Mr. Bates's Collection.
b. Adult male. Amazons. From Mr. Bates's Collection.
c. Large female: not good state. America. From Mr. Mather's Collection.
d–g. Half-grown and young. Vera Cruz. From Mr. Cuming's Collection.
h. Half-grown. Cordova. From M. Sallé's Collection.
i, *k*. Half-grown and young: not good state. Mexico. From M. Parzudaki's Collection.

Description.—Habit moderately slender; head broad, short, with flat crown, short blunt muzzle, and rounded canthus rostralis; eye moderate; tympanum small, circular, half-hidden by an overhanging fold, about one-third the width of eye. Extremities moderate, with well-developed subarticular tubercles and moderate disks; fingers one-fourth webbed, toes webbed to the penultimate phalanx. Skin of the upper parts and of the sides covered with large round flat warts; a broad glandular fold above the tympanum. Tongue nearly circular; inner nostrils and eustachian tubes moderate; vomerine teeth in two slightly arched series, scarcely interrupted in the middle, on a level with the hinder edge of the nostrils. In the Southern specimens the

colour above is nearly uniform brown; in those from Central America olive, with a very broad, white, blackish-edged band from the upper eyelid to the loin; some of the warts are deep black; beneath uniform whitish. Sacral vertebra moderately dilated; male with two large external vocal sacs behind the angle of mouth, Length of body $2\frac{3}{4}''$; length of front extremity $1\frac{1}{2}''$; length of hinder extremity $3\frac{2}{3}''$.

**** Group with vomerine teeth arranged in a straight, elongated line, more or less interrupted on the middle of the palate.* (— —)

15. Hyla cynocephala.

Dum. & Bibr. Erpétol. Génér. viii. p. 558.

Vomerine teeth on a level with the hinder edge of the nostrils. Fingers not webbed; back smooth; head covered with small tubercles. Guiana.

16. Hyla versicolor.

Hyla verrucosa, *Daud. Rain.* p. 33. pl. 4. f. 1.
—— versicolor, *Leconte, Ann. Lyc. Nat. Hist. New York*, i. p. 281; *Harlan, Journ. Acad. Nat. Sci. Philad.* v. 343; *Dum. & Bibr.* p. 566; *Dekay, New York Fauna, Rept.* p. 71. pl. 21. f. 53 *a*; *Holbr. N. Amer. Herpet.* iv. pl. 28.
Dendrohyas versicolor, *Tschudi, Batr.* p. 75.

Vomerine teeth on a level with the hinder edge of the nostrils. Fingers one-third webbed; skin warty; a cutaneous fold across the chest. Green, grey, or brown, with irregular darker spots; beneath yellowish. Male with a subgular external vocal sac.

a. Adult. Great Bear Lake. Presented by Sir J. Richardson.—Above greenish.
b. Adult male. Canada. Presented by J. Howell, Esq.
c. Adult male. Chippaway.
d. Adult male. New York.
e. Adult female. Philadelphia. From Mr. Cuming's Collection.
f, *g*. Half-grown. California. From Mr. Stevens's Collection.
h, *i*. Adult: bad state. North America. Presented by Edward Doubleday, Esq.
k. Adult male. North America. Presented by Dr. Jacob Green.
l–o. Adult. North America. Presented by Mr. Drummond.
p, *q*. Half-grown. North America. Presented by Edward Doubleday, Esq.
r–t. Young: very bad state. North America. Presented by Edward Doubleday, Esq.
u. Adult male. Mexico. From M. Parzudaki's Collection.
v. Adult female. Vera Cruz. From Mr. Cuming's Collection.
w. Adult female. America.
x. Adult female. America.
y. Half-grown: bleached. America.

17. Hyla venulosa.

Merian, Insect. Surin. t. 56; *Seba*, i. 71. 1. 2, 72. 4.
Rana venulosa, *Laur. Syn. Rept.* p. 31; *Daud. Quadr. Ovip.* p. 668; *Lacép. Quadr. Ovip.* i. p. 537; *Bonnat. Ophiol.* p. 8.
Rana tibiatrix, *Laur. l. c.* p. .
—— zebra, var. venulosa, *Shaw, Zool.* iii. p. 124.
—— meriana, *Shaw, l. c.* p. 133.
Calamita boans, *Schneid. Hist. Amph.* p. 164; *Merr. Tent.* p. 173.
Hyla venulosa, *Daud. Rain.* p. 35. pl. 13, and *Rept.* viii. p. 74; *Latr. Rept.* ii. p. 175; *Gravenh. Delic.* p. 24; *Dum. & Bibr.* p. 560; *Guichenot, Rept. in Castelnau's Anim. nouv. ou rares*, p. 84; *Burmeister, l. c.* p. 106.
Hyla tibiatrix, *Daud. Rain.* p. 36.
—— zonalis, bufonia, *Spix, Test.* t. 12. f. 1, 2.
Hypsiboas venulosa, *Wagl. Syst. Amph.* p. 201.
Auletris tibiatrix (!), *Wagl. l. c.*
Hypsiboas venulosus, *Tschudi, Batr.* p. 72.
Dendrohyas tibiatrix (!), *Tschudi, Batr.* p. 74.

Vomerine teeth on a level with the hinder edge of the nostrils. Fingers one-third webbed; skin warty; no cutaneous fold on the chest. Irregularly spotted or striped. Male with an external vocal sac on each side behind the angle of mouth.

a. Adult male. Cayenne.
b. Adult female. Cayenne.
c. Adult female. Para. Presented by R. Graham, Esq.
d. Young: not good state. Para. From Mr. Stevens's Collection.
e. Adult male: fine specimen. South America. Purchased of Dr. Gardiner.
f. Adult male. South America.
g. Adult male. South America.
h. Adult: bad state. South America. From Mr. Mather's Collection.
i. Adult: bad state. South America.
k. Adult: skin. South America. From Mr. Stevens's Collection.

18. Hyla marmorata.

Seba, i. 17. 4, 5.
Bufo marmoratus, *Laur. Syn.* p. 29; *Bonnat. Ophiol.* p. 14; *Lacép. Quadr. Ovip.* i. p. 607.
Hyla marmorata, *Daud. Rain.* p. 54. pl. 12. f. 1, 2, and *Rept.* viii. p. 71 *Latr. Rept.* ii. p. 184; *Dum. & Bibr.* p. 571; *Guichenot, l. c.* p. 85.
Calamita marmoratus, *Merr. Tent.* p. 174.
Lophopus marmoratus, *Tschudi, Batr.* p. 73; ? *Burmeister, l. c.* p. 93. t. 31. f. 1*a*.

Vomerine teeth on a level with the hinder edge of the nostrils. The three outer fingers nearly entirely webbed; outer edge of arm and foot with a broad cutaneous fold; skin with small scattered warts. Disks very large.

a. Half-grown: not good state. Brazil. Presented by Lord Stuart.
b. Young. Brazil. Presented by Lord Stuart.

19. Hyla corticalis.

Lophopus corticalis, *Burmeister, l. c.* p. 95. t. 30. f. 7–12.

Vomerine teeth behind the hinder edge of the nostrils. The three outer fingers nearly entirely webbed; outer edge of arm and foot with a broad cutaneous fold; skin with small scattered warts. Disks very large. Neufreiburg (Brazil).

20. Hyla carolinensis.

Catesby, Nat. Hist. Carol. ii. pl. 71.
Hyla viridis, var. *β*, *Laur. Syn. Rept.* p. 33.
Calamita carolinensis, *Penn. Zool. Arct.* ii. p. 331.
—— cinereus, *Schneid. Hist. Amph.* p. 174.
Rana bilineata, *Shaw, Zool.* iii. p. 136.
Hyla lateralis, *Latr. Rept.* ii. p. 180; *Daud. Rain.* p. 16. pl. 2. f. 1; *Leconte, Ann. Lyc. Nat. Hist. New York*, i. p. 278; *Harl. Journ. Acad. Nat. Sci. Philad.* v. p. 341; *Dum. & Bibr.* p. 587.
Hyla viridis, *Holbr. N. Amer. Herpet.* iv. pl. 29.

The series of vomerine teeth well separated from one another, on a level with the hinder edge of the nostrils; fingers slightly webbed; upper parts quite smooth. A white streak along the edge of the upper lip and the sides.

a–c. Adult and half-grown: bleached. North America.
d–f. Adult: not good state. New Orleans.

21. Hyla agrestis.

Bell, Zool. of the Beagle, Rept. p. 46. t. 19. f. 3.

The series of vomerine teeth well separated from one another, on a level with the hinder edge of the nostrils; fingers slightly webbed. A white streak only along the edge of the upper lip; another parallel line above the tympanum.

a, b. Adult and young. Maldonado. Presented by Charles Darwin, Esq.
c. Half-grown: not good state. America. Presented by Charles Darwin, Esq.

22. Hyla prasina.

Burmeister, l. c. p. 106. t. 31. f. 2.

The series of vomerine teeth on a level with the hinder edge of the nostrils; fingers slightly webbed; outer edge of the extremities and of the sides of the body with a cutaneous, serrated white fold. Skin of back smooth, green (olive in spirits). Neufreiburg (Brazil).

23. Hyla baudinii.

Dum. & Bibr. Erpétol. Génér. viii. p. 564.

Vomerine teeth on a level with the front edge of the nostrils; fingers one-fourth webbed; skin of back smooth, of throat tuberculous;

a cutaneous fold across the chest. Male with a vocal sac on each side beneath the angle of mouth; both sacs communicating one with the other.

a, *b*. Adult. Mexico.
c. Adult. Mexico. From M. Parzudaki's Collection.
d. Adult: not good state. Mexico. From M. Sallé's Collection.
e–g. Adult. Mexico. From Hugo Finck's Collection.
h. Adult: very bad state. Mexico. From Hugo Finck's Collection.
i, *k*. Adult males. Honduras.
l. Half-grown. Vera Cruz. From Mr. Cuming's Collection.
m. Adult female. Brazil. Presented by Lord Stuart.
n. Adult: not good state. Brazil.

24. Hyla capistrata.

Hyla capistrata, *Reuss, Mus. Senckenb.* i. p. 58. pl. 3. f. 4.
—— pumila, *Dum. & Bibr.* p. 565.

Vomerine teeth on a level with the front edge of the nostrils; fingers one-third webbed; skin of back and throat smooth; a cutaneous fold across the chest; lips white-spotted; male with a subgular external vocal sac. Brazil.

**** *Group with vomerine teeth arranged in two groups.*

25. Hyla vauterii.

Hyla vauterii, (*Bibr.*) *Bell, Zool. of the Beagle, Rept.* p. 45. pl. 19. f. 2.

Vomerine teeth in two groups, situated on a level with the hinder edge of the nostrils, and rather obliquely arranged, divergent towards behind; fingers slightly webbed; toes half-webbed; tympanum one-third of the width of eye. Reddish grey above with brown spots.

a. Adult. Maldonado. Presented by Charles Darwin, Esq.

26. Hyla aurantiaca.

Hyla aurantiaca, *Daud. Rain.* p. 28. pl. 9. f. 3, and *Rept.* viii. p. 57; *Dum. & Bibr.* p. 610; *Burmeister, l. c.* p. 105.
Hyla lactea, *Daud. Rain.* p. 30. pl. 10. f. 2, and *Rept.* viii. p. 62; *Latr. Rept.* ii. p. 178.
Calamita aurantiacus et lacteus, *Merr. Tent.* p. 172.
Dendrohyas rubra, *Tschudi, Batr.* p. 74.
Sphænorhynchus lacteus, *Tschudi, Batr.* p. 71.

Vomerine teeth on a level with the hinder edge of the nostrils. Fingers half-webbed; toes entirely webbed; tympanum rather indistinct; upper parts smooth; tongue entire behind, very large, covering the whole of the lower face of the buccal cavity. Above uniform brownish.

a. Adult: discoloured. Demerara. Presented by Sir W. Holmes.

27. Hyla fusca.

Hyla fusca, *Daud. Rain.* p. 40, and *Rept.* viii. p. 5; *Dum. & Bibr.* p. 574.
Calamita fusca, *Merr. Tent.* p. 170.

Vomerine teeth between the nostrils. Fingers slightly webbed; upper parts smooth; a fold across the chest; tympanum small, half the width of eye; tongue with an angular nick behind. Above uniform brown.

a. Adult: bad state. Brazil.

28. Hyla luteola.

Hyla luteola, *Wied, Abbild.* t. , and *Beitr.* i. p. 535; *Burmeister, l. c.* p. 107. t. 31. f. 3.
? Hyla nebulosa, *Spix, Spec. Nov. Test.* t. 10. f. 4.

Vomerine teeth between the nostrils. Fingers very slightly webbed; upper parts smooth; tympanum much smaller than eye; tongue nearly circular. Above yellow, minutely brown-spotted; belly whitish, variegated with darker; sides of the thighs and of belly with bluish cross-streaks (*Burm.*). Neufreiburg (Brazil).

29. Hyla arborea.

Gesner, Quadr. ii. p. 98; *Schwenckfeld, Theriogr. Siles.* p. 153; *Aldrov. Quadr.* i. p. 622.
Rana arborea, *L. Faun. Suec.* p. 180, and *Mus. Ad. Fried.* i. p. 47, and *Syst. Nat.* i. p. 357; *Rösel*, p. 39. t. 9–12; *Wulf, Ichthyol. Boruss.* p. 9; *Müller, Zool. Dan. Prodr.* p. 35; *Sturm, Deutschl. Fauna*, iii. Heft i.; *Donnd. Zool. Beitr.* iii. p. 57; *Latr. Salam.* p. 38; *Shaw, Zool.* iii. p. 130.
Hyla viridis, *Laur. Syn. Rept.* p. 33; *Bonnat. Ophiol.* p. 9; *Latr. Rept.* ii. p. 169; *Daud. Rain.* p. 14. f. 1, and *Rept.* viii. p. 23; *Gravenh. Delic.* p. 23; *Eichw. Zool. Spec.* iii. p. 166, and *Fauna Casp.-Cauc.* p. 124; *Bonap. Fauna Ital.*; *Bibr. et Bory St. Vincent, Expéd. Mor. Rept.* p. 74; *Dum. & Bibr.* p. 581.
Rana viridis, *Daub. Quadr. Ovip.* iii. p. 667; *Lacép. Quadr. Ovip.* i. p. 550.
Calamita arboreus, *Schneid. Amph.* p. 153; *Merr. Tent.* p. 170; *Risso, Hist. Nat. Eur. Mérid.* iii. p. 92.
Hyla arborea, *Cuv. Règne Anim.*; *Griff. Anim. Kingd.* ix. p. 396; *Schinz, Faun. Helvet.* p. 144.
Hyas arborea, *Wagl. Syst.* p. 201.
Dendrohyas arborea, *Tschudi, Batr.* p. 74.

Vomerine teeth between the nostrils. Fingers slightly webbed; toes two-thirds webbed; upper parts smooth; a fold across the chest; tympanum one-third the size of the eye; tongue circular, hardly nicked behind. Above greenish, sometimes spotted with olive, with a more or less conspicuous greyish streak through the eye, lost on the sides; sometimes a greyish elliptical spot on the loin.

A. *European specimens.*

The streak along the canthus rostralis generally narrow, and not extending far on the sides, sometimes wanting; the spot on the loin sometimes very conspicuous.

a–c. Adult. Hamburg. Presented by Dr. Tricke.
d, e. Adult male and female. Bononia. Presented by J. J. Bianconi.
f. Adult. Oporto.
g. Adult. Elba. Presented by Sir W. C. Trevelyan.
h. Half-grown. Guezama. Presented by Sir W. C. Trevelyan.
i. Adult. Corfu. Presented by R. Freet, Esq.
k, l. Very bad state. Sardinia. Presented by Professor Bonelli as *H. sarda.*
m. Adult male: discoloured. Mediterranean. Presented by — Müller, Esq.
n–q. Adult and young. South Europe. Presented by R. B. Webb, Esq.
r. Adult: discoloured. Europe. Presented by the Zoological Society.
s. Adult: not good state. Europe. Presented by the Zoological Society.
t. Adult: not good state. Europe. From the Haslar Collection.
u. Adult: bleached. Europe.
v. Adult: not good state. Europe.
w. Adult female: discoloured. Europe.
x. Half-grown. Europe.
y. Adult: stuffed. Europe.
z, α. Adult: skeletons. Italy.
β, γ. Adult and half-grown. Madeira. Presented by R. B. Webb, Esq.
δ. Adult. Madeira. Presented by R. B. Webb, Esq.
ε–η. Adult. Teneriffe. Presented by R. MacAndrew, Esq.

B. *African specimens.*

Like the European variety.

θ–κ. Adult. Africa.

C. *Asiatic specimens.*

† From Western Asia, like former.

λ. Adult. Asia Minor. From the Haslar Collection.
μ. Many specimens. Euphrates Expedition.
ν. Adult: bad state. Euphrates Expedition. Presented by the Zoological Society.
ξ. Adult: bad state. Euphrates Expedition. Presented by the Zoological Society.

†† From Eastern Asia.

I. Var. **chinensis** (Plate IX. fig. C.). Agrees in all its characters with our European specimens, except in having

some black spots on the loin and on the hinder part of the upper leg; the disks appear to be rather larger, and there is a very distinct web between the fingers.

o, *π*. Adult and half-grown. China. From Mr. Cuming's Collection.
ρ. Adult female. China. From Mr. Cuming's Collection.
s–*χ*. Adult and half-grown. China. From Mr. Cuming's Collection.
ψ. Adult: skeleton. China. From Mr. Cuming's Collection.

II. Var. **japonica**. Spot on the loin and streak through the eye wanting. In Schlegel's description (*Fauna Japon.* p. 112), another frog is confounded with this variety. Only fig. 6 of the third plate in that work belongs to *H. arborea*: see *Polypedates schlegelii*.

ω, *aa*. Adult and half-grown. Japan. From the Leyden Museum.
bb. Adult. Japan. From the Leyden Museum*.

30. **Hyla euphorbiacea**. (Plate X. fig. C.)

Vomerine teeth between the nostrils. Fingers not webbed; a slight rudiment of a web between the first and second fingers; toes one-third webbed; a fold across the chest; tympanum one-third the size of the eye; tongue circular, hardly nicked behind. Above greyish (in spirits greenish olive), with a grey streak from the nostril through the eye, widening on the sides and reaching to the loin; the hinder sides of the thighs white-spotted.

a. Adult male. Cordova. From M. Sallé's Collection.
b. Adult male. Cordilleras. From M. Parzudaki's Collection as *H. pulchella*.
c, *d*. Adult. Mexico. From M. Sallé's Collection.
e. Adult: skeleton. Mexico. From M. Sallé's Collection.

I formerly considered this American species to be a climatal variety of *Hyla arborea*; but M. Sallé, who collected the greater part of the specimens, has afforded me such information, that I no longer adhere to my former opinion. The American species never fully attains to the size of the European, the ground-colour is always grey or greyish, never green, and the voice is much less vigorous and different in intonation. M. Sallé generally found it resting on the large euphorbiaceous plants. From the great similarity of all the outward characters to *Hyla arborea*, and from the figure in Plate X., it will not be necessary to give a full description. The toes appear to be proportionally a little more slender.

The results of a comparison of the skeletons of the European and Chinese varieties of *Hyla arborea* and of *H. euphorbiacea* are, that

* In the "Zoology" of the 'Voyage au Pôle Sud et dans l'Océanie sur les Corvettes l'Astrolabe et la Zélée,' Part "Reptiles et Poissons, par Jacquinot et Guichenot," another variety of *Hyla viridis* is described at p. 25, and figured in pl. 1. fig. 2, 2 A, with black, lighter-edged spots. The figure does not appear to be very well executed, and the country where it was found is not mentioned.

the former exhibit no difference, whilst in the latter the iliac bones appear to be rather more elongate in proportion to the length of the whole vertebral column: the proportions of the different parts of the extremities are nearly the same.

31. Hyla rubra.

Hyla rubra, *Daud. Rain.* p. 26. pl. 9. f. 1, 2, and *Rept.* viii. p. 53; *Latr. Rept.* ii. p. 176; *Dum. & Bibr.* p. 592; *Burmeister, l. c.* p. 109.
Calamita ruber, *Merr. Tent.* p. 171.
Hyla X-signata, *Spix, Test.* t. 11. f. 3.
Auletris rubra, *Wagl. Amph.* p. 201.

Vomerine teeth between the nostrils. Fingers quite free; upper parts with a few small scattered tubercles; a fold across the chest; tympanum not half the width of the eye; tongue slightly notched behind. Above brownish or greyish, with a triangular spot between the eyes; generally on each side a curved band, both nearly confluent on the middle of the back, divergent towards front and towards behind.

a, b. Adult. Demerara. Presented by Captain Friend.
c, d. Adult: discoloured. Demerara. Presented by Colonel Sabine.
e. Adult. South America. Mus. Guilding.
f–h. Adult and half-grown. South America. From Mr. Bates's Collection.
i. Adult. Brazil.
k. Adult: bad state. Santarem; Amazons. From Mr. Bates's Collection.
l. Adult. Para. Presented by R. Graham, Esq.
m, n. Adult. Para. Presented by R. Graham, Esq.
o. Adult: bad state. Para. Presented by R. Graham, Esq.
p. Adult. Para. From Mr. Stevens's Collection.
q. Adult. Para. From Mr. Stevens's Collection.

32. Hyla zebra.

Dum. & Bibr. Erpétol. Génér. viii. p. 575.

Vomerine teeth nearly on a level with the hinder edge of the nostrils. Fingers one-third webbed; tympanum small, half the width of eye; head covered with small glands. Above brownish; thighs black- and white-banded.

33. Hyla leucomelas.

Dum. & Bibr. Erpétol. Génér. p. 576.

Vomerine teeth on a level with the hinder edge of the nostrils. Fingers one-third webbed; upper parts quite smooth. Above greyish, minutely dotted with black.

a. Adult. Caraccas.

34. Hyla squirella.

Hyla squirella, *Daud. Rain.* p. 18. pl. 3. f. 2, and *Rept.* viii. p. 34; *Latr. Rept.* ii. p. 181; *Leconte, Ann. Lyc. Nat. Hist. New York,* i. p. 279; *Harl. Journ. Acad. Nat. Sc. Philad.* v. p. 342; ? *Gravenh. Delic.* p. 28. t. 6. f. 1; *Dum. & Bibr.* p. 589; *Dekay, New York Fauna, Rept.* p. 72. pl. 21. f. 53; *Holbr. N. Amer. Herpet.* iv. pl. 30.
Hyla femoralis, *Daud. Rain.* p. 19. pl. 3. f. 1, and *Rept.* viii. p. 32; *Latr. l. c.*; *Leconte, l. c.* p. 280; *Harl. l. c.*; *Holbr. l. c.* pl. 31.
Calamita squirella et femoralis, *Merr. Tent.* p. 171.
Auletris squirella, *Wagl. Amph.* p. 201.
Dendrohyas squirella, *Tschudi, Batr.* p. 75.

Vomerine teeth on a level with the hinder edge of the nostrils. Fingers very slightly webbed; toes half-webbed; tympanum half the width of eye; tongue slightly nicked and free behind; a fold across the chest. Above greenish olive, with darker spots; sometimes the upper lip is white-edged, and the hinder side of the thigh white-spotted.

a. Adult. Georgia. From Mr. Cuming's Collection.

35. Hyla ewingii.

Dum. & Bibr. Erpétol. génér. viii. p. 597; *Jacq. & Guich. Rept. in Voy. au Pôle Sud par Dumont-d'Urville,* p. 26. pl. 1. f. 3, 3 A (not good).

Vomerine teeth on a level with the hinder edge of the nostrils; fingers quite free; toes broadly webbed; tympanum half the width of eye; tongue nearly circular; upper parts of the sides and upper eyelid tubercular. Above greyish, darker variegated and spotted; a blackish streak along the canthus rostralis; temple blackish.

a. Adult. Van Diemen's Land. Presented by the Zoological Society, and named by Bibron.
b–d. Adult females. Van Diemen's Land. Presented by R. Gunn, Esq.
e. Half-grown. Van Diemen's Land. Presented by R. Gunn, Esq.
f–i. Adult. Hobart Town. Presented by J. B. Jukes, Esq.
k. Adult: not good state. Hobart Town. Presented by J. B. Jukes, Esq.
l. Adult. Hobart Town. Presented by J. B. Jukes, Esq.
m. Adult. N.E. Australia. From Mr. Rich's Collection.
n. Half-grown. N.E. Australia.
o. Half-grown. Australia. Presented by the Earl of Derby.
p. Adult. Australia. Presented by the Zoological Society.
q–s. Adult and half-grown. Australia.
t. Adult male: remarkably small specimen. Australia. Purchased of Mr. Stevens.

36. Hyla rubella.

Gray, Zool. Misc. p. 57.

Vomerine teeth behind the level of the hinder edge of the nostrils; fingers quite free; toes two-thirds webbed; tympanum one-third the width of eye; tongue large, not notched behind; upper parts

quite smooth. Above greyish, sides of head and body with a broad purplish-brown band.

a, *b*. Adult females. Port Essington. Purchased of Mr. Gould.
c. Adult female. Port Essington. Purchased of Mr. Gould.

37. Hyla leucophyllata.

Hyla leucophyllata, *Beireis, in Schrift. der Berl. Naturf. Freunde*, iv. p. 178. t. 41. f. 4; *Shaw, Zool.* iii. p. 127; *Gravenh. Delic.* p. 31; *Dum. & Bibr.* p. 607; *Burmeister, l. c.* p. 104. t. 31. f. 4.
Calamita leucophyllatus, *Schneid. Amph.* p. 168; *Merr. Tent.* p. 173.
Hyla frontalis, *Daud. Rain.* p. 24. pl. 7, and *Rept.* viii. p. 45.
—— lateristriga, *Spix, Spec. Nov. Test.* t. 14. f. 4.
—— elegans, *Wied, Abbild.* pl. , and *Beitr.* i. p. 529.
Hypsiboas leucophyllatus, *Tschudi, Batr.* p. 72.

Vomerine teeth between the nostrils. Fingers half-webbed; upper parts smooth. Above blackish brown, with a triangular white spot on the forehead, and a white band on the sides of the back, sometimes confluent behind into a very large white blotch.

a. Adult. Brazil. Purchased of Dr. Gardiner.
b. Adult. Cayenne. From M. Parzudaki's Collection.

38. Hyla rhodopepla. (Plate VII. fig. E.)

Vomerine teeth between the nostrils; fingers nearly one-third webbed, toes completely webbed; back smooth; tongue circular, slightly nicked behind. Back and the upper side of the lower leg rose-coloured, the former scarcely dotted with violet; a purplish-brown, lighter-edged (in spirits) band round the muzzle through the eye, along the sides to the loin; upper arm and leg not coloured; under parts whitish.

a. Andes of Ecuador. From Mr. Fraser's Collection.

I found a single specimen of this beautiful species in a small collection of Batrachians sent by Mr. Fraser from Guayaquil. The specimen appears to be a half-grown individual, with the colours pretty well preserved, but otherwise not in the best condition. No cutaneous folds or appendages are visible, either of the front or of the hinder extremities. The muzzle is flat, obtuse, rounded; the tympanum rather more than half the width of the eye; the fourth finger is much longer than the second; the third and fifth toes are equal in length; at the base of the first finger a rudiment of a thumb is visible. Length of the body $1\frac{1}{5}''$; length of the front extremity not quite $\frac{3}{4}''$; length of the posterior extremity $1\frac{3}{4}''$.

39. Hyla peronii.

Hyla peronii, *Bibron, MSS.*; *Dum. & Bibr.* p. 569.
Dendrohyas peronii, *Tschudi, Batr.* p. 75.

Vomerine teeth between the nostrils; fingers one-fourth webbed;

back with a few small scattered tubercles; tongue circular, with an angular nick behind. Brownish, variegated with white and brown; arm-pit and loin blackish brown; hinder side of leg white, marbled with brown.

a. Adult male. Australia. Presented by Sir J. Richardson.
b. Adult female. Port Essington. Presented by the Earl of Derby.
c. Adult. Van Diemen's Land. Presented by Sir A. Smith.

40. Hyla adelaidensis.

Hyla adelaidensis, *Gray, in Grey's Journ. Exped. Austr.* p. 447. t. 8. f. 2.
Hyla bioculata, *Gray, l. c.* f. 1.

Vomerine teeth between the nostrils. Snout rather pointed. Fingers quite free; tongue large, covering the whole of the inferior face of the buccal cavity, slightly notched behind; back with a few small scattered tubercles. A brown streak, beneath edged with yellowish, extends from the back edge of eye to the abdomen.

A. Back purplish brown; hinder side of the thighs with some large round white spots.

a. Adult female. West Australia. From Mr. Gilbert's Collection. Type of Dr. Gray's *H. adelaidensis*.
b–h. Different ages. West Australia. Type of Dr. Gray's *H. bioculata*.
i–m. Larvæ and young. West Australia. Presented by G. T. Moore, Esq.
n. Adult: very bad state. Port Essington. Presented by Dr. Fleming.
o, p. Adult: not good state. Port Essington. Presented by Dr. Fleming.
q. Adult female. Port Essington. Presented by Dr. Fleming.
r. Adult. Australia. Presented by the Zoological Society.
s. Adult. Australia. Presented by the Zoological Society.

B. Back with darker spots; hinder side of thighs not coloured, sometimes with very obsolete lighter spots.

t–w. Adult males. Port Essington. Presented by Dr. Fleming.
x, y. Adult females. Port Essington. Presented by Dr. Fleming.
z. Adult. Port Essington. Presented by Dr. Fleming.
a. Adult. Port Essington. Presented by Dr. Fleming.

41. Hyla jervisiensis.

Dum. & Bibr. Erpétol. Génér. viii. p. 580.

Vomerine teeth on a level with the front edge of the nostrils; fingers half-webbed. Upper parts smooth, greyish, with a brown streak along the canthus rostralis, passing above the tympanum. New Holland.

***** *Group with vomerine teeth, arranged in two oblique series, convergent posteriorly.*

42. Hyla aurea.

Rana aurea, *Less. Voy. Coq. Zool.* ii. p. 60. pl. 7. f. 2.
Hyla jacksoniensis, *Bibr. MSS.*; *Dum. & Bibr.* p. 602.
Ranoidea jacksoniensis, *Tschudi, Batr.* p. 79.
Gray, in Grey's Journ. Exped. Austr. t. 8. f. 3 (without name).

Fingers free; toes broadly webbed; head longer than broad; tongue elliptical, slightly notched behind; upper parts smooth; a glandular fold behind the angle of mouth. Olive, with a whitish band on each side of back; a blackish streak along the canthus rostralis. Male with a subgular vocal sac.

a–d. Adult. West Australia.
e–h. Adult. West Australia.
i, *k*. Adult. West Australia.
l–o. Adult and half-grown. West Australia.
p–r. Half-grown. West Australia.
s. Young. West Australia.
t. Adult. King George's Sound. From the Leyden Museum as *H. ewingii*.
u. Fine specimen. New South Wales. Presented by Sir A. Smith.
v. Adult: not good state. Swan River.
w, *x*. Young and half-grown. Swan River. Presented by Sir A. Smith.
y, *z*. Adult males. Port Essington. Presented by Dr. Fleming.
α, *β*. Adult males. Port Essington. Presented by Dr. Fleming.
γ. Half-grown: bad state. Port Essington. Presented by Dr. Fleming.
δ, *ε*. Half-grown. Port Essington. Presented by Dr. Fleming.
ζ. Adult female. Tasmania. Presented by R. Gunn, Esq.
η–ι. Half-grown. Tasmania. Presented by R. Gunn, Esq.
κ, *λ*. Half-grown: bad state. Tasmania. Presented by R. Gunn, Esq.
μ. Five young specimens. Tasmania. Capt. Ross's Expedition.
ν. Adult: very bad state. New Holland.
ξ. Adult: not good state. New Holland. Presented by Charles Darwin, Esq.
ο, *π*. Adult females. New Holland. Presented by J. B. Jukes, Esq.
ρ. Adult. New Holland. From M. Parzudaki's Collection.
σ, *τ*. Adult: not good state. New Holland. Presented by Mrs. Rawdon.
υ. Adult. New Holland. Presented by the Earl of Derby.
φ. Adult: very bad state. ——? Presented by C. Bowring, Esq.
χ. Adult female. Melbourne. Presented by Mr. Krefft.
ψ. Adult: skeleton. New Holland.
ω. Adult female: skeleton. Australia.

Skeleton.—Besides the zygomatic and pterygoid arches, there is a

third from the tympanic bone to the maxillary formed by the processus mastoideus, which reaches to that point of the maxillary where this bone is united with the pterygoid. As in *Cystignathus*, there is a large os intercalare between the frontal and parietal bones, with distinct sutures in one of the skeletons, which in another are confounded with those bones. The sides of the skull are more or less ossified, according to the age of the individual. The coccygeal style is not quite as long as the vertebral column, and provided with a high, sharp ridge. The claviculæ are curved, with the convexity behind; in front of their symphysis is the manubrium sterni, half-cartilaginous, not bifid; the coracoid bones are rather feeble, dilated at the sternal end, and joined behind with a very large and broad ossifying cartilage. Humerus with a moderate ridge, still lower in the femur. The iliac bones have a slight longitudinal groove, are just as long as the crus, and a little longer than the humerus.

43. Hyla verreauxii.

Dum. Ann. Sc. Nat. 1854, p. 171.

Fingers free, toes broadly webbed; head short; muzzle angular, obtuse; loreal region concave; tympanum much smaller than the eye; tongue slightly nicked behind; upper parts smooth, a glandular fold above the tympanum. Above brown, with a broad darker band from between the eyes to the vent. New Holland.

44. Hyla citropus.

Hyla citropa, *Péron and Lesueur, MSS.*; *Dum. & Bibr.* p. 600.
Dendrohyas citropa, *Tschudi, Batr.* p. 75.

Fingers quite free; toes only webbed at the base; tongue circular, entire and free behind. Port Jackson.

4. NOTOTREMA.

Vomerine teeth. Skin of back glandular, of crown smooth; no large gland. Disks rather large; fingers and toes elongate, very slightly webbed. Tympanum distinct; eustachian tubes moderate; tongue large, nearly circular, very slightly notched behind. Transverse process of sacral vertebra equally dilated from the base. Male with an external subgular vocal sac; female with a pouch on the hinder part of the back. Peru; Mexico.

Hyla, sp., *Dum. & Bibr.* viii. p. 598.
Gastrotheca*, *Fitz. Syst. Rept.* p. 30.

* Fitzinger appears to have believed in the existence of a pouch on the belly; his denomination is derived from γαστὴρ belly, and θήκη, used by the old anatomists for the brain-pan; therefore I think myself justified in not accepting his name.

1. **Nototrema marsupiatum.** (Plate X. figs. B, B′, B″.)

Hyla marsupiata, *Dum. & Bibr. l. c.* pl. 98; *Guichenot, Rept. in Casteln. Anim. nouv. ou rares de l'Amér. du Sud,* p. 86.

Vomerine teeth in two series, in a straight line between the inner nostrils. Above uniform bluish olive (in spirits), or greenish olive with bluish or dark green, black-edged longitudinal spots, and with transverse bars on the extremities.

a. Adult male. Mexico. From M. Parzudaki's Collection.
b, c. Adult male. Andes of Ecuador. From Mr. Fraser's Collection.
d. Female: pouch not developed. Andes of Ecuador. From Mr. Fraser's Collection.—Coloration uniform.
e, f. Females: pouch not developed. Andes of Ecuador. From Mr. Fraser's Collection.—Back and extremities spotted.
g. Female: with a pouch on the back, not extending above the sacral region. Andes of Ecuador. From Mr. Fraser's Collection. —Coloration uniform.
h. Female: pouch filled with eggs. Andes of Ecuador.—From Mr. Fraser's Collection.—Coloration uniform.
i. Adult male. Andes of Ecuador. From Mr. Fraser's Collection. —Uniform shining greenish brown.
k. Adult male. Andes of Ecuador. From Mr. Fraser's Collection. =*i.*
l–t. Adult and half-grown specimens. Andes of Ecuador. From Mr. Fraser's Collection.

Mr. Fraser collected, in the Andes of Ecuador, a series of these animals, strikingly illustrating the changes to which the coloration of this species and the pouch are subjected. The coloration is not dependent on sex or on age, as is shown by the notices given above. The females appear to attain nearly their full size before the development of the pouch on the back. In specimen *d.* there is hardly a trace of it to be seen. Specimens *e.* and *f.* are rather larger, and exhibit two longitudinal folds of the skin along the iliac bones; they are united by a transverse fold, corresponding to the level of the sacral vertebra (fig. B.); these folds are so low, that, at present, there is no cavity between or beneath them. The pouch of the specimen *g.* (fig. B′.), extending 2 millim. upwards, may be considered as a further degree of development; but it may also be the contracted cavity, the young frogs having left the back of the mother. I may add, that the whole inside of the pouch of these specimens is provided with a skin, identical with the external cutis and having the same coloration. Specimen *h.* (fig. B″.) shows the pouch filled with eggs, extending to near the occiput, forming a separated sac between the cutis and the dorsal muscles; the entrance is very narrow, and concealed in folds of the cutis. The inside is colourless. The eggs appear to be very young, not yet exhibiting a trace of the fœtus.

5. OPISTHODELPHYS.

Vomerine teeth. Skin of back smooth; head above bony, with a rough ridge on the occiput. Disks large; fingers slightly, toes broadly webbed; tympanum distinct; eustachian tubes moderate; tongue large, nearly circular, very slightly notched behind. Female with a pouch on the hinder part of the back. Central America.

Notodelphys*, *Weinland, Monatsberichte der Acad. der Wiss. Berlin*, 1854, p. 372.

1. Opisthodelphys ovifera.

Notodelphys ovifera, *Weinland, l. c.*, and in *Müller's Archiv*, 1854, p. 449. t. 17–19.

Crown concave; occiput with a bony, rough ridge, forming two arches with the convexity forward. Vomerine teeth in two series in a straight line, between the interior nostrils.

a. Half-grown male. Cordova. From M. Sallé's Collection.—Our specimen differs from that of Weinland in having the sides not uniform brown, but with some large, not confluent, dark brown spots.

6. TRACHYCEPHALUS.

Vomerine teeth. Skin more or less granular; head above bony, with or without bony ridges. Disks large; membrane between the fingers not much developed; toes broadly webbed. Tympanum distinct; eustachian tubes moderate; tongue large, nearly circular, very slightly notched behind. Males with two internal, lateral, vocal sacs; females without pouch on the back. West Indies; South America.

Trachycephalus, *Dum. & Bibr.* viii. p. 534.
Trachycephalus, Dendrohyas, sp., Hypsiboas, sp., *Tschudi, Batr.* pp. 72, 74.

1. Trachycephalus marmoratus.

Trachycephalus marmoratus, *Bibr. in Hist. de l'Ile de Cuba par Ramon de la Sagra, Rept.* t. 29; *Dum. & Bibr.* p. 538.
Hyla septentrionalis, *Mus. Paris. et Lugd.*
Dendrohyas septentrionalis, *Tschudi, Batr.* p. 74.
Hyla brunnea, *Gosse, A Naturalist's Sojourn in Jamaica*, p. 361.

Vomerine teeth in a straight line between the inner nostrils, hardly interrupted in the middle; canthus rostralis with a bony, smooth ridge; bony surface of the crown finely granular; fingers slightly webbed.

a–d. Adult. Cuba. Presented by the Zoological Society.
e, f. Adult. Cuba. Presented by W. S. Macleay, Esq.
g. Half-grown. Cuba. From M. Parzudaki's Collection.

* Preoccupied by a genus of Entomostraca (Ann. & Mag. Nat. Hist. 1847. vol. xx. p. 2).

h–m. Adult, half-grown, and young. St. Domingo. From Mr. Cuming's Collection.
n. Adult. Jamaica.
o. Half-grown female: bad state. Jamaica. Presented by Mr. Gosse, and type of his *H. brunnea*.
p. Adult: skeleton. (Caraccas?)

2. Trachycephalus geographicus.

Trachycephalus nigromaculatus, *Tschudi, l. c.*
—— geographicus, *Dum. & Bibr.* p. 536.

Vomerine teeth in a straight line between the inner nostrils, hardly interrupted in the middle; canthus rostralis with a bony ridge; bony surface of crown marked with radiating striæ; fingers slightly webbed.

a. Adult male and female. South America.
b. Half-grown female. Brazil. Presented by Lord Stuart.

3. Trachycephalus dominicensis.

Hypsiboas dominicensis, (*Mus. Paris*) *Tschudi, Batr.* p. 72.
Trachycephalus dominicensis, *Dum. & Bibr.* p. 540.

Vomerine teeth in a distinctly arched, scarcely interrupted series between the inner nostrils; canthus rostralis rounded; bony surface of the crown finely granular; the three outer fingers nearly half-webbed.

a. Adult. Hayti. Presented by the Zoological Society.
b. Adult. St. Domingo.
c. Adult. St. Domingo. From M. Sallé's Collection.
d. Adult: not good state. Jamaica. Presented by N. Wilson, Esq.

4. Trachycephalus lichenatus.

Gosse, A Naturalist's Sojourn in Jamaica, p. 362. pl. 7.

Vomerine teeth in two straight or slightly arched, oblique series, convergent towards front; canthus rostralis with a bony ridge; head above with sharp bony ridges, one from the back edge of orbit passing above the tympanum, another on the occiput, forming two arches with the convexity towards behind. Skin tuberculous; fingers one-third webbed.

a, b. Adult females. West Indies. Stevens's sale.
c. Adult. West Indies.
d. Adult. West Indies.
e, f. Adult: not good state. Jamaica. Presented by Mrs. Mauger.
g. Adult: bad state. Jamaica.
h. Adult. West Indies. From the Collection of T. C. Eyton, Esq.
i, k. Adult. Presented by Sir A. Smith.

Fam. 4. PELODRYADIDÆ.

Hylina with webbed toes, dilated processes of sacral vertebra, and with paratoids.

One genus. Australia.

1. PELODRYAS.

Vomerine teeth. Skin minutely granular, with a large broad paratoid. Disks very large; fingers one-half or one-third, toes two-thirds webbed; first finger opposite to the three others. Tympanum distinct; eustachian tubes moderate; tongue large, circular, very slightly notched behind. Diapophysis of sacral vertebra dilated. Males with an internal subgular vocal sac. Australia.

1. Pelodryas cæruleus. (Plate IX. fig. B.)

Rana cærulea, *White, Journ. N. S. Wales, App.* p. 248 (fig. bad); *Shaw, Zool.* iii. p. 113; *Daud. Rain.* p. 70; *Merr. Tent.* p. 174.
Rana australasiæ, *Schneid. Hist. Amph.* p. 150.
Hyla cyanea, *Daud. Rept.* viii. p. 43; *Cuv. Règne Anim.*; *Schleg. Abbild.* t. 9. f. 2; *Dum. & Bibr.* p. 577.
Calamites cæruleus, *Wagl. Amph.* p. 200.
Calamita cyanea, *Tschudi, Batr.* p. 73.

Above uniform green, in spirits bluish, beneath uniform whitish. Vomerine teeth in two oblique series, convergent posteriorly.

a–d. Adult. Port Essington. Purchased of Mr. Gould.
e. Adult. Port Essington. Presented by the Earl of Derby.
f. Adult. Port Essington. Presented by the Earl of Derby.
g. Adult. North Australia. Presented by Dr. J. E. Elsey.
h, i. Adult. Australia. Presented by the Earl of Derby.
k. Adult male: skeleton. Australia.
l. Adult. Australia. Voyage of the Herald.
m. Adult male. Antarctic Expedition.
n. Adult. Moreton Bay. Purchased of Mr. Stevens.

Description.—In habit very similar to *Phyllomedusa bicolor*; head broader than long, with broad crown and short, rounded muzzle; eye moderate; cleft of mouth rather large; behind the eye a large broad paratoid, extending to the shoulder, projecting far above the tympanum, with many pores; skin of the back minutely granular, the granules on the sides and beneath larger. Disks of the fingers very large, as large as the tympanum, those of the toes rather smaller; first finger opposite to the three others; a rudimentary membrane between the first and second fingers; the three outer ones one-third webbed, with moderate subarticular tubercles; in specimen *m.* (fig. *b*) the web extends over one-half of the length of the fingers; fore-arm with a cutaneous ridge to the elbow. Toes two-thirds webbed, the membrane being deeply notched; subarticular tubercles moderate; metatarsus with one small, oval, blunt tubercle; a cutaneous fold along

its inner edge. Tongue nearly circular, slightly notched behind; inner nostrils large; vomerine teeth situated in two oval, rather oblique groups, a little behind the middle of the inner edge of the nostrils; palate with a deep longitudinal groove on each side; eustachian tubes moderate; tympanum very distinct, not quite as large as the eye. Males with a large internal subgular sac with two openings; sacral vertebra much dilated, and its process provided with a broad, long cartilage at its outer edge. Above uniform green, in spirits bluish, beneath uniform whitish. Length of body $3\frac{1}{2}''$; distance between the eyes $\frac{7}{8}''$; length of front extremity $2''$; length of hinder extremity $3\frac{3}{4}''$; length of fourth toe $1''$.

Fam. 5. PHYLLOMEDUSIDÆ.

Hylina with free toes, dilated processes of the sacral vertebra, and with paratoids.

One genus. South America.

1. PHYLLOMEDUSA.

Vomerine teeth. Skin smooth, with a large elongate paratoid. Disks large; fingers and toes quite free; the first finger and the first two toes opposite to the three others. Tympanum rather indistinct. Eustachian tubes moderate; tongue large, pear-shaped, entire and free behind. Transverse process of sacral vertebra much dilated. Males with an internal subgular vocal sac. South America.

Phyllomedusa, *Wagl. Syst. Amph.* p. 201; *Tschudi, Batr.* p. 70; *Dum. & Bibr.* viii. p. 627.
Hyla, sp., *auct. prior.*

1. Phyllomedusa bicolor.

Rana bicolor, *Boddaert, Monogr. de Rana bicol.* f. 1–3, and *Schriften der Berl. Naturf.* ii. p. 459; *Shaw, Nat. Misc.* x. p. 367, and *Zool.* iii. p. 126.
Calamita bicolor, *Schneid. Hist. Amph.* p. 156; *Merr. Tent.* p. 170.
Hyla bicolor, *Latr. Rept.* ii. p. 174; *Daud. Rain.* p. 22. pl. 5, 6, and *Rept.* viii. p. 40; *Spix, Test.* t. 13. f. 1, 2; *Gravenh. Delic.* p. 26; *Cuv. Règne Anim.*; *Guérin, Iconogr.* pl. 26. f. 3.
Hyla hypochondrialis, *Latr. l. c.* p. 177; *Daud. Rain.* p. 29. pl. 10. f. 1, and *Rept.* viii. p. 60; *Gravenh. l. c.* p. 28.
Phyllomedusa bicolor, *Wagl. Syst.* p. 201; *Tschudi, Batr.* p. 70; *Dum. & Bibr.* p. 629. pl. 90. f. 2 *a, b, c*; *Burmeister, Erlaüterungen zur Fauna Brasil.* p. 111. t. 32.

Blue above; thighs and sides spotted with white.

a–c. Adult. Brazil. Presented by Dr. Gardiner.
d. Adult. Brazil. Presented by Sir A. Smith.
e. Half-grown: bad state. Brazil. From M. Parzudaki's Collection.
f. Young. Brazil. Presented by Lord Stuart.

g, *h*. Half-grown. Berbice.
i. Young. Dutch Guiana. Presented by Sir A. Smith.
k. Adult. South America. Presented by G. Busk, Esq.
l. Adult. South America.
m. Half-grown: bad state. South America. From Mr. Bates's Collection.
n, *o*. Adult and half-grown. Brazil.
p. Adult. South America.
q, *r*. Young. South America.
s. Half-grown: stuffed. Brazil. Presented by Mrs. Parker.
t. Half-grown: stuffed. Brazil. Presented by Mrs. Parker.
u. Adult: skeleton. Brazil.

Section II. **Micrhylina.**

O. PACHYDACTYLA with maxillary teeth, and with imperfectly developed ear.

Fam. 1. MICRHYLIDÆ.

MICRHYLINA with webbed toes, dilated processes of sacral vertebra, and without paratoids.

One genus. Java.

1. MICRHYLA.

No vomerine teeth*. In habit similar to Engystoma, with rather long legs. Disks moderate; fingers quite free; toes webbed. Skin smooth. No tympanum, no cavum tympani, no eustachian tubes†; tongue rather elongate, oval, rather broader and entire behind. Male with an internal subgular vocal sac. Java.

Micrhyla, *Dum. & Bibr.* viii. p. 613.
Microhyla, *Tschudi*, *Batr.* p. 71.
Hylaplesia, sp., *Boie*, *Isis*, 1827, p. 294.

1. **Micrhyla achatina.**

Hylaplesia achatina, *Boie*, *l. c.*
Microhyla achatina, *Tschudi*, *l. c.*; *Dum. & Bibr.* p. 614.

Crown with a brown cross-band; on each side of the back an elongated brownish-black spot.

a. Adult. Java. From the Leyden Museum.

* Like Bibron, I was not able to find the "dentes palatinos brevissimos," mentioned by Tschudi.

† "Tympan caché; trompes d'Eustachi excessivement petits."—*Dum. & Bibr.* "Trommelfell fehlt; Trommelhöhle äusserst klein; tuba Eustachii nur ein äusserst feines Kanälchen."—*Tschudi*, p. 28.

Section III. **Hylaplesina.**

O. PLATYDACTYLA without maxillary teeth and with perfectly developed ear.

Fam. 1. HYLÆDACTYLIDÆ.

HYLAPLESINA with webbed toes, dilated processes of sacral vertebra, and without paratoids.

One genus. East Indies.

1. KALOULA.

Habit similar to Engystoma; head rather small, with short muzzle; cleft of mouth rather narrow; extremities rather short; teeth none in jaws or in palate, a sharp bony transverse ridge behind the inner nostrils (? sometimes bearing very minute teeth: *D. & B.*). On the hinder part of palate two transverse, dentated, membranaceous folds; tongue oval, free and entire behind. Eustachian tubes round, narrow; tympanum indistinct; paratoids none; skin smooth, with a few flat warts; metatarsus with two tubercles. Fingers four, much dilated at the tip; toes five, slightly webbed, or with only a rudimentary membrane, moderately dilated at the end. Males with an internal subgular vocal sac. East Indies.

Hyladactylus, *Tschudi, Batr.* p. 85; *Dum. & Bibr.* viii. p. 732.
Plectropus, *Dum. & Bibr.* viii. p. 736.
Kaloula, *Gray, Zool. Misc.* 1831, p. 38.

1. Kaloula baleata.

Bombinator baleatus, *Müll. Verhandel. Batav. Genotsch. Batav.* 1836, p. 96.
Hyladactylus baleatus, *Tschudi, Batr.* p. 85; *Dum. & Bibr.* p. 734.

Snout rather blunt and angular; a conspicuous rudiment of a membrane between the toes. Uniform brown, each joint of the extremities with a pair of large white spots.

a. Adult. Java.
b. Adult. Java. From the Leyden Museum.
c, d. Adult. Java. From the Leyden Museum.
e. Adult. ——?
f. Adult: not good state. Ceylon? Presented by Sir A. Smith.—Brownish black; above marbled with black, beneath with white; no white spots at the joints.—Perhaps a distinct species.

Var. **Hylædactylus celebensis.** Belly dark brown, like back; white spots not much conspicuous.

g. Adult. India. From Mr. Parrey's Collection.
h. Half-grown. India. From the Leyden Museum.

2. Kaloula pulchra.

Kaloula pulchra, *Gray, Zool. Misc.* p. 38.
Hylædactylus bivittatus, *Cantor*; *Catal. Malay Rept.* p. 143.

Snout very blunt and short; a rudiment of a membrane between the toes hardly conspicuous. Light brown, with a large triangular dark brown spot, covering nearly the whole of the back, beginning with a truncated tip between the eyes and becoming broader posteriorly; whitish spots on the joints only visible in younger individuals.

a. Adult. Ceylon. Presented by Dr. Kelaart.
b. Half-grown. Ceylon. From Mr. Cuming's Collection.
c, *d*. Adult and half-grown. China. Presented by J. Reeve, Esq.
e. Adult. China.
f, *g*. Young. China.

3. Kaloula picta.

Plectropus pictus, (*Bibron*) *Eydoux et Souleyet, Voy. de la Bonite, Rept.* pl. 9. f. 2; *Dum. & Bibr.* p. 737.

Muzzle rather blunt, not very short, angular; toes one-third webbed. Olive or brownish, the darker coloration of back sometimes forming a large triangular spot, with a tapering end on the occiput, sometimes separated in more or less confluent spots; no white spots on the joints.

A. *Male*=*Plectropus pictus*, Bibr. Tips of fingers and toes very slightly enlarged, cylindrical, scarcely dilated; inner tubercle of metatarsus large, flat, round, not sharp.

a. Adult. Philippine Islands.

B. *Female*. Tips of fingers and toes much dilated, ends of fingers broader than that of toes; inner tubercle of metatarsus oval, rounded, moderate.

b–d. Adult. Philippine Islands.
e. Adult. Philippine Islands.

The male individual in the British Museum Collection belongs undoubtedly to that form of Batrachians called by Bibron *Plectropus pictus*. On the other hand, another Batrachian from the Philippine Islands, *with all the characters of Kaloula*, agrees so perfectly with *Plectropus*, except in the character of the toes, as to lead me to believe that both forms are identical, one being the male, and the other the female. A comparison of more specimens will no doubt show the truth of my belief that there exist sexual differences in the third species of *Kaloula*, and that hitherto only the male was known, and described by Bibron as *Plectropus pictus*.

Fam. 2. BRACHYMERIDÆ.

Hylaplesina with free toes, dilated processes of sacral vertebra, and without paratoids.

One genus. South Africa.

1. BRACHYMERUS.

Habit rather stout; head small, rather short, cleft of mouth moderate; extremities short; teeth none in jaws nor in palate, nor a sharp bony ridge; tongue oblong, broadest behind, slightly emarginate. Tympanum hidden; eustachian tubes very small; skin smooth; metatarsus without any tubercles. Fingers four, toes five, all free and dilated at the end. Sacral vertebra not much extended. South Africa.

Brachymerus, *Smith, Illustrations of the Zoology of South Africa.*

1. Brachymerus bifasciatus.

Smith, l. c. pl. 63; *Peters in Wiegm. Archiv*, 1855, p. 58.

Above deep liver-brown, with two red (in spirits yellowish) longitudinal bands; beneath brownish, variegated with yellowish; extremities yellow-spotted.

a. Adult: not good state. South Africa. Presented by Sir A. Smith.
b–g. Adult and young. South Africa. Presented by Sir A. Smith.

Fam. 3. HYLAPLESIDÆ.

Hylaplesina with free toes, cylindrical processes of sacral vertebra, and without paratoids.

One genus. Tropical America.

1. HYLAPLESIA.

Habit raniform; head moderate, angular; cleft of mouth moderate; extremities moderate; teeth none in jaws nor in palate; tongue elongate, free and entire behind. Tympanum rather indistinct; paratoids none; skin smooth, or with small, flat, smooth tubercles; metatarsus with two feeble blunt tubercles. Fingers four, toes five, all free and dilated at the end. Sacral vertebra not dilated. Males with an internal subgular vocal sac. Tropical America.

Dendrobates, *Wagl. Syst. Amph.* p. 202; *Dum. & Bibr.* viii. p. 649.
Hylaplesia, sp., *Boie, Isis*, 1827, p. 294; *Tschudi, Batr.* p. 70.
Hyla, sp., Rana, sp., Calamita, sp., *auct. prior.*

1. Hylaplesia tinctoria.

Linn. Amœn. i. p. 566; *Bonnat. Encycl.* p. 10.
Calamita tinctorius, *Schneid. Hist. Amph.* p. 175; *Merr. Tent.* p. 169.
Rana tinctoria, *Shaw, Gen. Zool.* iii. p. 135.
Hyla tinctoria, *Latr. Rept.* ii. p. 170; *Daud. Rain.* p. 25. pl. 8, and *Rept.* viii. p. 48; *Cuv. Règne Anim.*
Dendrobates tinctorius, *Wagl. Syst. Amph.* p. 202; *Dum. & Bibr.* p. 652. pl. 90. f. 1, 1*a*.
—— trivittatus, (*Spix*) *Wagl. l. c.*
Hylaplesia tinctoria, *Boie, l. c.*; *Tschudi, Batr.* p. 70.

First finger shorter than second; back smooth.

Var. A. Above black, with two white lateral stripes, beginning from a white spot on the crown, sometimes one or two cross-streaks between; beneath blackish, with deep black spots, or with whitish markings.—*Dendrobates lugubris*, Schmidt, Denkschr. Acad. Wiss. Wien, 1858, p. 250. t. 2. f. 14.

a. Adult. Cayenne.
b. Half-grown. Bogota. Presented by Mr. Marks.
c. Young. Para. Presented by R. Graham, Esq.
d. Adult: very bad state. South America. Presented by Sir R. Schomburgk.

Var. B. Upper parts uniform grey (in spirits); under parts uniform black.

e. Adult. Para. Presented by R. Graham, Esq.
f. Adult. Para. Presented by R. Graham, Esq.
g. Adult. Para. From Mr. Stevens's Collection.

Var. C. Black, with scattered round white spots.

h. Adult. South America. From Mr. Cuming's Collection.

Var. D. Quite uniform black.

i. Adult. Panama. From M. Pfeffer's Collection.
k–o. Adult. Panama. From Mr. Stevens's Collection.
p. Half-grown. America.

Var. E. Grey, with large black blotches.

q. Adult. Isthmus of Darien. Presented by the Zoological Society, and named by Bibron *Dendrobates latimaculatus*.

Var. F. Brownish on the muzzle, and on each side a large white spot; upper arm and leg with a white ring (*Dum. & Bibr.* p. 654).

2. Hylaplesia picta.

Hylaplesia picta, *Tschudi, Batr.* p. 71.
Dendrobates pictus, *Dum. & Bibr.* p. 656; *Gay, Chile, Zool.* ii. p. 119.

First finger longer than second; back tubercular, with a glandular ridge on each side. Brownish black, with two white lateral

bands; upper jaw white-edged; a white streak along the hinder side of the thigh; sometimes uniform brown.

Our specimens agree in all their characters with the description of Bibron, except in always having the first finger longer than the second, as is mentioned in another species of Bibron, *D. obscurus*, p. 655, a species quite unknown to us. (Cfr. *Guichenot, Rept. in Casteln. Anim. nouv. de l'Amér. du Sud*, p. 87. pl. 17. f. 2.)

a. Adult. Brazil.—Uniform brown: this is to be considered only as a variety, and may prove to be *D. obscurus*, Bibr.
b, *c*. Adult. Para. From Mr. Stevens's Collection.
d. Adult. Demerara. Presented by the Zoological Society.
e. Adult. Demerara. Presented by the Zoological Society.
f. Adult: not good state. St. Domingo.

3. Hylaplesia speciosa.

Dendrobates speciosus, *Schmidt, Denkschr. Acad. Wiss. Wien*, 1858, p. 249. t. 1. f. 11, t. 2. f. 12.

First finger shorter than second. Entirely smooth, without folds. Uniform carmine-red (in spirits bluish grey). Andes of New Granada (6000 feet).

4. Hylaplesia pumilio.

Dendrobates pumilio, *Schmidt, l. c.* p. 250. t. 2. f. 13.

Entirely smooth, without folds. Above violet, beneath greyish white; sacral region, sides, extremities, belly and breast punctulated with black. Andes of New Granada (6000 feet).

5. Hylaplesia lateralis.

Dendrobates lateralis, *Gay, Chile, Zool.* ii. p. 120. pl. 5. f. 2.

First finger shorter than second. Back smooth. Above yellowish white, with a brown band on each side of the back and head; sides punctulated with brown. Chile.

C. PROTEROGLOSSA.

Section I. **Rhinophrynina.**

Proteroglossa without maxillary teeth and with imperfectly developed ear.

Fam. 1. RHINOPHRYNIDÆ.

Rhinophrynina with webbed toes, dilated processes of sacral vertebra, and with paratoids.

One genus.

1. RHINOPHRYNUS.

Body broad, rather depressed, rounded; head confounded with body; muzzle truncated, forming a flat circular disk in front; skin smooth; paratoid hidden, large, with smooth surface; no tympanum, no cavum tympani, no eustachian tubes; fingers webbed at the base; toes half-webbed; first cuneiform bone forming a flat, oval, horny spur. Male with two lateral vocal cavities, internal, and hidden behind the angle of the mouth. Mexico.

Rhinophrynus, *Dum. & Bibr.* viii. p. 757.

1. **Rhinophrynus dorsalis.** (Plate XII.)

Dum. & Bibr. viii. p. 758. pl. 91. f. 2, 2*a* (bad); *Günther, Proc. Zool. Soc.* 1858, p. 339.

Bluish grey, with yellowish spots on the sides and in the vertebral line, the latter sometimes confluent.

a. Adult male. Mexico. From M. Sallé's Collection.
b, *c*. Adult and young. Mexico. From M. Parzudaki's Collection.
d. Half-grown. South America. From M. Sallé's Collection.
e, *f*. Young. Vera Cruz. From Mr. Cuming's Collection.

APPENDIX.

The present Appendix gives an account of the specimens collected since this Catalogue was printed, and descriptions of several new species. I am also enabled to make some additional remarks, especially to the synonymy, from works to which I have had no access before.

Page 2. **Dactylethra lævis.**

f. Adult. Cape. Presented by Sir A. Smith.

Page 3. **Pipa americana.**

Guichen. Rept. in Castelnau, Anim. nouv. ou rares de l'Amér. du Sud, p. 92. pl. 18.

c'. Female with young on the back. Tropical America. Presented by Sir A. Smith.

Page 3. **Myobatrachus paradoxus.**

Professor Schlegel of Leyden has kindly informed me, that the two large canines are true teeth of the vomer, situated immediately behind the intermaxillary bone. The tympanum and cavum tympani are absent; and thus we have, in the *Protero-*, *Opistho-*, and *Aglossa* respectively, forms with an imperfectly developed ear. The diapophysis of the sacral vertebra is dilated. Prof. Schlegel will figure this Batrachian in the second Part of his *Zoology*.

Pages 4 and 22. **LEIUPERUS.**

Schmidt (*Denkschr. Acad. Wiss. Wien*, 1858, p. 240) is perfectly right in denying the existence of the web between the toes of these Batrachians. I had formerly seen only a single young specimen of *Leiuperus marmoratus*, and was obliged to confide in the account given in the *Erpétologie générale*. This genus therefore must be removed into the family of *Cystignathidæ*; and in the diagnosis of the genus, "toes webbed at the base" must be altered into "toes free."

Page 5. Add to the *Synopsis of the Genera*.

14 *a*. **Stenorhynchus.** Toes half-webbed; tympanum hidden; no vomerine teeth.

Page 5. **Pseudis paradoxa.**

k'. Young. Surinam. Presented by Sir A. Smith.

Page 7. **Tomopterna adspersa.**

c, *d*. Adult and half-grown. Cape. Presented by Sir A. Smith.

Page 7. **Tomopterna delalandii.** (Plate II. fig. A.)

c. Many specimens. Cape. Presented by Sir A. Smith.
d. Many specimens. Sine patria. Presented by J. C. Jerdon, Esq.
e. Skeleton: male. Sine patria. Presented by J. C. Jerdon, Esq.

Page 7.—4. **Tomopterna natalensis.**

Pyxicephalus natalensis, *Smith*, *Ill. S. Afr. App.* p. 23.

Lower jaw with two very weak prominences; legs much longer than body; snout rounded, moderate; tympanum half the size of eye; toes only one-third webbed. Yellowish grey, with a blackish-green band from the muzzle to the side of body, a short black cross-band on the front part of the back, and with cross-bands on the legs.

a. Natal. Presented by Sir A. Smith.
b. Adult. South Africa. Presented by Sir A. Smith.

Page 8. **Rana kuhlii.**

Var. A.

a'. Half-grown. Celebes. Presented by Sir A. Smith.

Var. B.

c'. Young. Ceylon. Purchased of Mr. Cuming.

Page 9. **Rana macrodon.**

f. Large specimen. Java. Presented by Sir A. Smith.

Page 9. **Rana vittigera.**

I have since ascertained that there is far more probability that the specimens *t*–*x* were procured in China, and not in Ceylon.

Page 10. **Rana tigrina.**

t', *t''*. Fine specimens. Ceylon. Purchased of Mr. Cuming.
x'. Young. Ceylon. Purchased of Mr. Cuming.
η'. Very large specimen. India. Presented by Sir A. Smith.

Page 11. **Rana hexadactyla.**

c'–d'. Adult and half-grown. Ceylon. Presented by Sir A. Smith.
l. Adult. India. Presented by Sir A. Smith.
m. Many half-grown specimens. India. Presented by Sir A. Smith.

Page 11. *7a*. **Rana occipitalis.** (Plate XI.)

Body with small tubercles and short longitudinal folds; no distinct pores; a small fold in front of the upper eyelid, another across the occiput, uniting both the posterior angles of the eyelids; toes of moderate length, terminating in a small knob, completely webbed, without notch between; the fourth not much longer than the third. Above greenish brown, marbled with darker; a whitish streak across the occiput.

a. Fine female specimen. West Africa. From Mr. Fraser's Collection.
b–d. Adult females. Africa. Presented by Sir A. Smith.
e–g. Adult males. Africa. Presented by Sir A. Smith.
h–k. Adult females. Gambia. Presented by Sir A. Smith.
l. Fine female specimen. Africa. Presented by Sir A. Smith.

Description.—This species is in habit somewhat similar to *Rana tigrina*. The forehead is flat; the canthus rostralis indistinct; the sides of the head oblique; the muzzle rounded, of moderate length, in the male rather narrower than in the female. The nostrils are situated near the end of the muzzle, and opened towards the upper surface. The eyes are of moderate size, prominent above the level of the crown, and with a rather narrow space between; in front and behind the eyelid a fold, as described above. The tympanum is round, coloured, and not quite so large as the eye. The inner nostrils and eustachian tubes are nearly equal and of moderate size; the vomerine teeth are arranged in two series, convergent posteriorly, and each beginning from the front edge of the inner nostril. The lower jaw is provided with two bony prominences, but they are low and covered with the mucosa, and correspond to two grooves in the upper jaw. There are two external vocal sacs in the male, each with a small round opening near the angle of the mouth. The body and the extremities are rather stout, the former covered with short folds, and on the sides with numerous tubercles; the belly is smooth. The toes are of moderate length, rather short; the third longer than the fifth; all terminate in small knobs, and are connected by a web, which is not notched, and reaches to the extreme end of the toe; there is even a cutaneous fold extended along the outer edges of the first and fifth toe, and another fold runs along the tarsal edge. Metatarsus with only one oblong tubercle. The third finger is the longest, and fringed along the inner edge; the first and fourth are equal in length; the second is the shortest, and fringed on both edges. The two inner fingers terminate in small knobs, the two outer ones are rather pointed; in the male the base of the first is very

thick. The ground colour of the upper parts is brown or greenish brown, marbled with brownish-black spots; all the specimens exhibit a more or less distinct whitish streak along the transverse fold on the occiput. The belly is whitish; the throat reticulated with brown. Length of the body 4″; length of the hinder extremity $5\frac{3}{4}$″; length of the tarsus with the fourth toe $2\frac{2}{5}$″; length of the anterior extremity $2\frac{1}{4}$″.

Page 12. **Rana malabarica.**

d′, *e′*. Adult and half-grown. Ceylon. Purchased of Mr. Cuming.
g′, *g″*. Half-grown and young. Ceylon. Purchased of Mr. Cuming.

Having now received specimens in a very good state of preservation, I have no doubt this species must be transferred to the Platydactyla, and placed in the genus Hylarana, where I shall give a modified diagnosis of it.

Page 13. **Rana esculenta**, var. **japonica.**

dd. Adult. Japan. Presented by Sir A. Smith.

Page 13. **Rana halecina.**

Dekay, New York Fauna, Rept. p. 63. pl. 20. f. 49.

b′. Fine female specimen. Canada. Presented by Sir A. Smith.
u. Adult. North America. Presented by Odo Russell, Esq.
v. Adult. North America. Presented by Odo Russell, Esq.

Page 14. **Rana palustris.**

Rana pardalis, *Harlan, Amer. Journ.* x. p. 50.
—— palustris, *Dekay, New York Fauna, Rept.* p. 62. pl. 22. f. 60.

a, *b*. Adult: not good state. North America. Presented by Sir A. Smith.

Page 14.—12 *a*. **Rana horiconensis.**

Holbr. N. Amer. Herpetol. iv. p. 83. pl. 19.
Dekay, New York Fauna, Rept. p. 61. pl. 22. f. 62.

A glandular fold on each side; toes not quite webbed to the end; metatarsus with one tubercle. Vomerine teeth in two small groups between the inner nostrils. Dark olive with irregular, rather small black spots; upper lip with dark bars; above this is an indistinct clouded white band to the shoulder. Tympanum about the size of the eye.

a. Adult: not good state. Canada. Presented by Sir A. Smith.

Page 14. **Rana clamata.**

Rana fontinalis, *Dekay, New York Fauna, Rept.* p. 62. pl. 21. f. 54 *a*.

Page 15. **Rana mugiens.**

Rana pipiens, *Dekay, l. c.* p. 60. pl. 19. f. 48.

l. Large female. North America. Presented by Odo Russell, Esq.
m, n. Large males. North America. Presented by Odo Russell, Esq.
o. Very large female. Southern States. Purchased of Mr. Jamrach.

Page 17. **Rana temporaria,** var. **silvatica.**

Rana silvatica, *Dekay, New York Fauna, Rept.* p. 64. pl. 20. f. 50. (young), pl. 21. f. 54.

Page 17. **Rana superciliaris.**

The folds in front and behind the upper eyelid are also met with in *Rana oxyrhynchus* and *bibronii*; but in *Rana superciliaris* there are two white longitudinal streaks on the hinder side of the thigh, with a black one between—the same part being irregularly spotted in *Rana oxyrhynchus*. *Rana bibronii* has a white vertebral band; but it may prove to be identical with *Rana superciliaris*.

Page 18. **Rana bibronii.**

b–g. Adult and half-grown. Gambia. Presented by Sir A. Smith.

Page 18. **Rana grayi.**

d–h. Adult and half-grown. South Africa. Presented by Sir A. Smith.
i, k. Adult. Cape. Presented by Sir A. Smith.

Page 18. **Rana mascareniensis.**

b. Adult: bad state. Abyssinia. Presented by Sir A. Smith.

Page 19. **Rana fuscigula.**

i, k. Adult. Sierra Leone. Presented by Sir A. Smith.

Page 19. **Rana oxyrhynchus.**

b. Fine specimen. Cape. Presented by Sir A. Smith.
c. Half-grown. Cape. Presented by Sir A. Smith.
d. Fine specimen. Natal. Presented by Sir A. Smith.

Page 20. **Rana delalandii.**

i. Half-grown. Africa. From Mr. Frank's Collection as *Rana gracilis*. Presented by Sir A. Smith.

Page 20. **Rana fasciata.**

c. Many young and adult specimens. Cape. Presented by Sir A. Smith.

Page 20. **Sphærotheca strigata.**

Having found, in the Collection of Sir A. Smith, specimens of *Tomopterna lalandii* in an adult and perfect state, I was immediately convinced of the identity of *Sph. strigata* with that species, and it was evident that the specimens presented by Mr. Jerdon to the British Museum were not procured in the East Indies, as indicated by that gentleman. The figure given in the *Erpétologie générale* was made from a half-grown specimen, and it is difficult to recognize the species by it.

Page 21. **Calyptocephalus gayi.**

Gay, Chile, Zool. ii. *Erpetol.* pp. 107, 109. pl. 6.

Page 21. **Cyclorhamphus marmoratus.**

Gay, l. c. p. 129. pl. 7. f. 4.

c. Adult: not good state. Chili. Purchased of M. Parzudaki.

d. Adult. Andes of Ecuador. From Mr. Fraser's Collection.—This specimen has the vomerine teeth arranged in two series, and belongs perhaps to a distinct species.

Page 24. **Pyxicephalus americanus.**

d. Adult. Tropical America. Presented by Sir A. Smith.

Page 26.—14 *a*. **STENORHYNCHUS.**

Habit moderate, raniform. Tongue elongate, cordiform, nicked behind; no vomerine teeth. Eustachian tubes small; tympanum hidden, beneath the skin. Skin with tubercles. Fingers free, toes half-webbed; metatarsus with two tubercles.

Stenorhynchus, *Smith, Ill. S. Afr. Rept. App.* p. 23.

1. **Stenorhynchus natalensis.**

Smith, l. c. p. 24.

Brownish grey marbled with darker, beneath whitish; throat marbled with brown.

a. Adult female. Natal. Presented by Sir A. Smith.

Page 26. Add to the *Synopsis of the Genera*.

4. **Leiuperus.** No vomerine teeth.

(5. **Arthroleptis.**)

Page 29.—7*a*. **Cystignathus roseus.**

Dum. & Bibr. viii. p. 114; *Gay, Chile, Zool.* ii. *Erpetol.* p. 99. pl. 7. f. 3.

Tympanum scarcely distinct; vomerine teeth in two groups on a level with the posterior margin of the nostrils. Tongue circular; the inner nostrils and eustachian tubes very narrow. Upper parts rose-coloured, back with a brownish shade; the hinder side of the thighs blackish, spotted with white; belly whitish. Chili.

Page 29. **Cystignathus nodosus.**

Gay, Chile, Zool. ii. *Erpetol.* p. 98.

Page 30. **Cystignathus senegalensis.**

b–f. Adult. Cape. Presented by Sir A. Smith.

Page 30. **Cystignathus georgianus.**

i. Many specimens. Van Diemen's Land. Presented by Sir A. Smith.

Page 31. **Pleurodema labyrinthicum.**

Cystignathus labyrinthicus, *Guichen. Rept. in Casteln. Anim. nouv. ou rares de l'Amér. du Sud*, p. 79. pl. 16.

Page 31. **Pleurodema bibroni.**

Cystignathus bibroni, *Gay, Chile, Zool.* ii. *Erpetol.* p. 96. pl. 7. f. 2.

Var. *elegans* (p. 32). Cystignathus elegans, *Gay, l. c.* p. 101.

Page 33.—1 *a*. **Limnodynastes peronii.**

Cystignathus peronii, *Dum. & Bibr.* p. 409.

No large gland. Back with longitudinal folds. Head moderate; snout produced, depressed, flat; tongue cordiform, slightly nicked behind. Brownish, with longitudinal series of brown spots on the back and cross-bars on the legs; belly marbled with brown.

a. Adult male: not good state. Van Diemen's Land. Presented by Sir A. Smith.

I am now convinced that this species of Duméril and Bibron, which I have placed as a doubtful synonym of *L. dorsalis*, forms a distinct species, distinguished from *L. tasmaniensis* by its coloration and the folds on the back.

Page 33. **Limnodynastes tasmaniensis.**

g–k. Adult and half-grown. Van Diemen's Land. Presented by Sir A. Smith.

Page 34. Transfer from p. 22: 4. **LEIUPERUS.**

Add to the diagnosis of **Leiuperus marmoratus**: "Space between the eyes as broad as the diameter of the eyes." And also add a second species—

2. **Leiuperus sagittifer.**

Schmidt, Denkschr. Acad. Wiss. Wien, 1858, p. 240.

Space between the eyes very narrow. Above bluish brown with lighter markings; an arrow-shaped line from the muzzle to the anus (*Schmidt*).—New Granada.

The genus **ARTHROLEPTIS** of Smith (*Ill. S. Afr. Rept. App.* p. 24) might follow here, but the description there given does not offer sufficient characters to distinguish it from *Leiuperus*. On the other hand, the specimen itself upon which the species is founded has suffered so much as not to enable me to complete that description.

1. **Arthroleptis wahlbergii.**

Smith, l. c. p. 24.

a. Bad state. Cape. Presented by Sir A. Smith.

Page 35. **Pelodytes punctatus.**

d. France. Presented by Sir A. Smith.

Page 36. **Discoglossus pictus.**

h'–h'''. Adult and half-grown. Sine patria. Presented by Sir A. Smith.

Page 37.

There was in the Collection of Sir A. Smith a specimen of that scarce frog named *Ceratophryne nasuta* by Prof. Schlegel. It is a native of Sumatra, and not of Borneo. In all the anatomical characters and in general appearance it is so closely allied to *Megalophrys montana*, that it might be placed in the same genus; but there not being even a rudiment of a web between the toes, I am obliged not only to adopt the genus established by Schlegel, but to place it in the family Asterophrydidæ.

Fam. 4. ASTEROPHRYDIDÆ.

Synopsis of the Genera.

1. **Ceratophryne.** No vomerine teeth. Eyelid and muzzle prolonged into a single cutaneous appendage.
2. **Asterophrys.** Vomerine teeth numerous. Each eyelid with several cutaneous appendages.

1. CERATOPHRYNE.

Head and body very much depressed; outer edge of upper eyelid and end of the muzzle prolonged into a pointed appendage; cleft of mouth large, extremities moderate; vomerine teeth none; tongue circular, free and entire behind; tympanum small, hidden or indistinct; eustachian tubes rather small; fingers and toes completely free; no prominence on the first cuneiform bone. Diapophysis of sacral vertebra much dilated. Sumatra.

Ceratophryne, *Schlegel.*

1. Ceratophryne nasuta.

Ceratophryne nasuta, *Schleg.*

Back with some narrow cutaneous folds. Brownish yellow above; throat and belly brown.

a. Sumatra. Presented by Sir A. Smith.

Page 38. Alytes obstetricans.

c. Adult female with eggs. Presented by Sir A. Smith.

Page 38. Scaphiopus solitarius.

Dekay, New York Fauna, Rept. p. 66. pl. 19. f. 47.

Page 40. Pelobates fuscus.

g'. Adult. France. Presented by Sir A. Smith.

Page 43. PHRYNISCUS.

Hylæmorphus, (*Fitz.*) *Schmidt, Denkschr. Acad. Wiss. Wien*, 1858, p. 255.

Page 43. Phryniscus nigricans.

e. Adult. South America. Presented by Sir A. Smith.

Page 44. Phryniscus cruciger.

Phirix (!) *pachydermus*, Schmidt, *l. c.* p. 256. t. 3. f. 26, is very probably a variety of coloration of the above species. Both the following species have much less slender fore-extremities than the specimen figured by myself; nevertheless they are alike in all other respects. *Phirix pachydermus* by no means can be separated from *Phr. bibronii*; and I am the more glad to state this, as the name of the new genus would be a nonsense name.

e, f. Half-grown. Central America. Presented by Sir A. Smith.

Page 44. 3 *a*. **Phryniscus bibronii.**

Hylæmorphus bibronii, *Schmidt, Denkschr. Acad. Wiss. Wien*, 1858, p. 256. t. 3. f. 25 (not good).

Upper parts without spines, smooth; snout pointed, much protruding, obliquely truncated, the prolonged outlines forming an acute angle; canthus rostralis not swollen, crown flat; extremities still more slender than in *Phr. cruciger*, the length of the femur and tibia together being rather more than the length of the body, while the same parts are much shorter in *Phr. cruciger*. Above olive, with broad brown reticulated bands, transverse as well as longitudinal. Along the side of head and body a broad brown band; lower parts whitish.

a. Adult. Puerto Caballo. Presented by Sir A. Smith.

Page 45. **Phryniscus varius.**

Hylæmorphus dumerilii, *Schmidt, l. c.* p. 255. t. 3. f. 23, 24.

Page 46. **Pseudophryne bibronii.**

c. Adult. Swan River. Presented by Sir A. Smith.

This specimen has a large and flat lumbar gland, which is much less conspicuous in the other specimens. Eustachian tubes and tympanum absent.

Page 47. **Hemisus guttatum.**

d. Adult. Natal. Presented by Sir A. Smith.

e. Half-grown. Africa. Presented by Sir A. Smith as *Engystoma vermiculatum*.

f. Adult. Coast of Guinea. Presented by Sir A. Smith as *E. guineense*.

Page 48. **Rhinoderma darwinii.**

Gay, Chile, Zool. ii. *Erpetol.* p. 122. pl. 7. f. 1.

g. Fine specimen. S. America. Presented by Sir A. Smith.

Page 49. **Uperodon marmoratum.**

g. Fine specimen. Presented by Sir A. Smith.

Page 50. **Diplopelma ornatum.**

e', *e''*. Fine specimens. Presented by Sir A. Smith.

Page 53. **Breviceps verrucosus.**

c. Young. Cape. Presented by Sir A. Smith.

Page 53. **Chelydobatrachus gouldii.**

c. Half-grown. Swan River. Presented by Sir A. Smith.

Page 54. Add to the *Synopsis of the Genera*:—

1*a*. **Schismaderma.** Crown flat; skin warty; paratoids flat, indistinct.

Page 55.—1*a*. **SCHISMADERMA.**

Head moderate; muzzle distinct, short; eye moderate; extremities rather short; teeth none in jaws nor in palate. Tongue elliptical, entire and free behind. Tympanum large, prominent; eustachian tubes moderate; paratoids flat, very indistinct; skin warty; fingers free, toes webbed; a blunt tubercle at the base of the first toe. Male with a single internal vocal sac. South Africa.

Schismaderma, *Smith, Ill. S. Afr. Rept. App.* p. 28.

1. **Schismaderma carens.**

Bufo carens, *Smith, l. c.* pl. . f. .
Bufo vertebralis, *Smith, l. c.* f. (young).
Schismaderma lateralis, *Smith, l. c. App.* p. 28.

Tympanum circular, rather larger than the eye; web between the toes extending to near the tip, but deeply notched; a cutaneous fold along the inner edge of tarsus. From the back edge of eye above the tympanum to the sides of the body a black, above white-edged band.

a–f. Adult. Natal. Presented by Sir A. Smith.
g. Young. Presented by Sir A. Smith (*Bufo vertebralis*).

The results of my examinations of the same specimens, upon which Sir A. Smith has founded *Bufo carens* and *vertebralis*, and which he has generously presented to the British Museum, together with the other valuable Batrachians collected during his sojourn in Southern Africa, differ somewhat from those given in his great work. First, there are no teeth in the lower jaw; this bone is equally covered with the mucosa, and some prominences on it are merely deposits of calcareous matter, in consequence of the partial dissolution of the inorganic parts of the bones. Secondly, in the present state of preservation, nothing of a paratoid is to be seen; but at the place where it ought to be found, the skin, after an incision, appears much thicker, with an internal stratum of parenchyma; and I believe that there has been a paratoid, certainly flat, and not prominent. In the same way, I have observed the paratoid to become invisible in *Pelodryas cæruleus*. Finally, all the specimens upon which *B. vertebralis* has been founded are *young* individuals, of the greatest similarity to *B. carens*. Now, in these also I am not able to point out the paratoid; but Sir A. Smith, who has

seen them alive, mentions an indistinct paratoid, which would confirm my opinion, given above. The white spot on the vertebral line is not a constant character, being absent in one-half of the young specimens.

Page 55. **Bufo vulgaris.**

Bufo cinereus, *Brandt & Ratzeburg, Medicin. Zool.* i. p. 193. t. 23.

ϵ. Fine specimen. Japan. Presented by Sir A. Smith.

Page 56. **Bufo chilensis.**

Gay, Chile, Zool. ii. *Erpetol.* p. 125. pl. 5. f. 3.

Page 57. 3 *a*. **Bufo simus.**

Schmidt, Denkschr. Acad. Wiss. Wien, 1858, p. 254. t. 3. f. 22 (hind-foot).

Crown without bony enlargement; paratoids moderate, irregularly rounded; tarsus without cutaneous fold; a metacarpal rudiment of the thumb. Toes half-webbed; the third finger longer than the fourth, the third toe shorter than the fifth. Back with larger and shorter flat warts. Tympanum hidden; eustachian tubes small. Above grey or brown, beneath with blackish irregular spots. Chiriqui River.

Page 58. **Bufo viridis.**

Bufo variabilis, *Brandt & Ratzeburg, l. c.* p. 197. t. 23.

Page 59. **Bufo pantherinus.**

o'. Adult. Gambia. Presented by Sir A. Smith.
α, *β*. Adult. Presented by Sir A. Smith as *Bufo arabica*.

Page 59. **Bufo angusticeps.**

c–f. Not good state. Cape. Presented by Sir A. Smith.—Probably identical with *B. pantherinus*.

Bufo gariepensis, *Smith, Ill. S. Afr. Rept.* pl. 69. f. 2, 1 likewise consider to be young specimens of *B. pantherinus*.

a, *b*. Cape. Presented by Sir A. Smith.—Original specimens, upon which the species was founded.

Page 60. **Bufo guineensis.**

d'. Adult. Coast of Guinea. Presented by Sir A. Smith.

Page 60. **Bufo tuberosus.**

b. Adult. Presented by Sir A. Smith.

Page 61. **Bufo celebensis.**

c. Adult. Presented by Sir A. Smith.

Page 62. **Bufo biporcatus.**

Dumont d' Urville, Voy. au Pôle Sud, Rept. et Poiss. p. 28. pl. 1. f. 5, 5 *a*.

Page 62. 14 *a*. **Bufo kelaartii.** (Plate X. fig. A.)

Crown flat, without bony enlargement; canthus rostralis angular, tubercular; upper eyelid edged with a series of tubercles. Skin covered with tubercles. Paratoid very narrow and rather elongate. Toes broadly webbed. Tympanum rather indistinct. Above brown, a lighter cross-band between the eyes. Belly yellowish, brown-spotted.

a. Half-grown. Ceylon. From Mr. Cuming's Collection.
b, *c*. Young. Ceylon. From Mr. Cuming's Collection.
d. Half-grown. Ceylon. Presented by Sir A. Smith.

Description.—Head triangular, with angular rough canthus rostralis and moderate muzzle; snout rather pointed in front; crown flat, rather broad; extremities moderate. Fingers rather long and slender, quite free; carpus with a blunt flat tubercle; toes rather short, broadly webbed; metatarsus with two small blunt tubercles; no cutaneous fold along the edge of tarsus. Skin tuberculous, rough; a very narrow paratoid from the tympanum to near half the side of the back; outer edge of upper eyelid rather prominent, with a convex series of rough tubercles. Nostrils lateral, but near the end of snout. Cleft of mouth moderate. Palate quite smooth, without any bony or membranaceous prominences, but with two longitudinal grooves. Tongue very narrow, elliptical, free and entire behind; inner nares moderate; eustachian tubes small; tympanum rather indistinct. Above brown, sometimes the back with lighter, sometimes with darker variegations; a lighter cross-band between the eyes; extremities with indistinct cross-bands. Belly yellowish, more or less distinctly brown-spotted, the spots more crowded towards the middle. The largest specimen is the size of a *Bombinator igneus*.

Page 63. **Bufo lentiginosus.**

Bufo americanus, *Dekay, New York Fauna, Rept.* p. 67. pl. 19. f. 46 (young), pl. 20. f. 52.

Page 64. 15 *a*. **Bufo intermedius.** (Plate IX. fig. A.)

A bony ridge above the orbit; another between the orbit and para-

toid, entirely hidden by the skin, and rectangular to the first. Paratoid elliptical, moderate. Tympanum more or less indistinct, of moderate size. The first finger longer and thicker than the second; metatarsus without cutaneous fold, with two tubercles, covered by a horny brown membrane; toes half-webbed. Above brownish or greenish olive, with many irregular brown spots, sometimes confluent; no distinct dorsal streak; spots between the eyes irregular.

a–d. Adult. Andes of Ecuador. From Mr. Fraser's Collection.

Description. — This species resembles in many respects *Bufo lentiginosus*; the bony ridge is rounded and rather low, and commences from the upper margin of the orbit; it is a little divergent from that of the other side, not continued above the paratoid, and emits there a lateral branch which is hidden by the skin. The tympanum is rather indistinct, and sometimes coloured or spotted. Tongue broader than in most of the species of *Bufo*. The skin is covered with small warts, but none of them bear spines. No large gland on the leg. The first finger is the thickest, longer than the second, but nearly equal in length to the third. The web between the toes reaches to the tip, except in the fourth, where the outer three phalanges are free; the third rather longer than the second. One specimen is entirely similar in coloration to *Bufo variabilis*, but in the others the spots expand more, and occupy nearly each half of the back; on the sides and on the legs the spots remain more separate; the spots are also less crowded along the vertebral line, but the dorsal streak is always irregular and interrupted; the crown of the head is either uniform or with more or less spots, irregularly arranged. Belly nearly uniform whitish. Length of the body $3\frac{1}{2}''$; length of the anterior extremity $2''$, of the posterior $4''$; breadth of the cleft of mouth $1\frac{1}{8}''$.

Page 64. **Bufo ornatus.**

Bufo melanotis, *Guichen. Rept. in Casteln. Anim. nouv. ou rares*, p. 89.

I mentioned above, as a character of this species, the tarsus provided with a series of small tubercles. I find, by continued examination, that the tarsus has a cutaneous fold along the inner edge; but generally it is crenulated, so as to give the appearance of a series of tubercles; in a few specimens, as in the following, it is entire; I find this to be the case also in specimens from the Continent of Tropical America.

ε–ι. Adult and half-grown. Barbadoes. Presented by Sir A. Smith.

Page 65. **Bufo agua.**

Guichen. Rept. in Casteln. Anim. nouv. ou rares, p. 88.

γ′. Adult. Trinidad. Presented by Sir A. Smith.

Page 67.—22 *a*. **Bufo veraguensis.**

Schmidt, Denkschr. Acad. Wiss. Berl. 1858, p. 253. t. 2. f. 20, t. 3. f. 21.

Crown concave, with an obtuse bony enlargement on each side round the upper edge of the eye, emitting a process posteriorly; both the processes convergent posteriorly. Paratoids moderate, prominent, oblong. Tympanum hidden. Toes entirely webbed, but the web deeply notched between the toes. Tarsus without cutaneous fold. On each side of the back a series of larger tubercles. Above greyish, marbled with blackish brown; beneath yellowish grey. Veragua.

Page 67. **Bufo granulosus.**

h. Adult. Dutch Guiana. Presented by Sir A. Smith.

Page 68. **Bufo gutturosus.**

h. Adult. St. Domingo. Presented by Sir A. Smith.

Page 69. 25 *a*. **Bufo pleuropterus.**

Schmidt, Denkschr. Acad. Wiss. Wien, 1858, p. 252. t. 2. f. 17–19.

A low bony enlargement above the eye; muzzle narrow, rather pointed, short; a cutaneous fold on each side, attached along the femur and extending nearly to the knee. Paratoid very small; the margin of the web between the toes serrated. Bolivia (3000 feet).

Page 69. **Otilophus margaritifer.**

Bufo margaritifer, *Guichen. Rept. in Casteln. Anim. nouv. ou rares*, p. 90; *Schmidt, Denkschr. Acad. Wiss. Wien*, 1858, p. 251. t. 2. f. 15, 16 (head not good).

Page 71. **Acris gryllus.**

Hylodes gryllus, *Dekay, New York Fauna, Rept.* p. 70. pl. 22. f. 61.

Page 71. **Acris pickeringii.**

Hylodes pickeringii, *Dekay, l. c.* p. 69. pl. 20. f. 51.

Page 72. 1 *a*. **Hylarana malabarica.**

Rana malabarica, *Dum. & Bibr.* pl. 86. f. 1, 1 *a* (toes very bad). (See this Catalogue, pp. 11 and 131.)

Snout moderately elongate and rather pointed; the fourth toe two-thirds of the length of body; toes half-webbed; disks small; on each side of back a feeble white cutaneous fold, another white streak along the upper lip and the side of the belly; sides of head and body blackish, white-spotted behind.

Page 73. **Hylarana erythræa.**

f'. Half-grown. East Indies. Purchased.

Page 73. **Hylarana chalconota.**

b, *c*. Adult and half-grown. Ceylon. Purchased of Mr. Cuming.

These specimens differ a little from the Javanese one in having a whitish streak along the upper lip; but the glandular fold is not white, and the muzzle is less pointed, as in *H. erythræa*.

Page 73. **Hylarana albolabris.**

d, *e*. Large specimens. West Africa. Presented by Sir A. Smith.
f. Adult female. Fernando Po. Presented by Sir A. Smith.

Page 74. **Ixalus aurifasciatus.**

Dumont d'Urville, Voy. au Pôle Sud, Rept. et Poiss. p. 25. pl. 1. f. 1, 1 A.

Page 74. **Ixalus variabilis.**

Var. A.

h'. Adult. Ceylon. Purchased of Mr. Cuming.
h'', *h'''*. Adult and half-grown. Ceylon. Purchased of Mr. Cuming.

Page 77. **Polypedates microtympanum.**

l–q. Adult. Ceylon. Presented by Sir A. Smith.

Polypedates tephræomystax, *Dum. Ann. Sci. Nat.* 1854, p. 158, appears to be allied to this species.

Page 78. **Polypedates maculatus.**

h'–h'''. Adult and half-grown: fine specimens. Ceylon. Purchased of Mr. Cuming.
q'. Half-grown. Ceylon. Purchased of Mr. Cuming.

Page 79. **Polypedates quadrilineatus.**

w. Adult. India. Presented by Sir A. Smith.

Page 80. **Polypedates eques.**

g, *h*. Adult. Ceylon. Purchased of Mr. Cuming.
i, *k*. Large specimens. Ceylon. Presented by Sir A. Smith.
l. Large specimen. Ceylon. Presented by Sir A. Smith.

Page 85. **Hyperolius marmoratus.**

Var. A.

g'. Many specimens. Natal. Presented by Sir A. Smith.

Var. B.

i, *k*. Adult. Natal. Presented by Sir A. Smith.

Var. C. or *Hyperolius verrucosus* (Sundev.), *Smith, Ill. S. Afr. Rept. App.* p. 26.

l. Adult. Presented by Sir A. Smith.

Page 86. **Hyperolius horstockii.**

e, *f*. Adult. Natal. Presented by Sir A. Smith.

Page 88. **Hyperolius modestus.**

Tympanum hidden; head moderate; muzzle truncated in front; fingers one-fourth, toes two-thirds webbed. Above uniform olive (in spirits), beneath uniform whitish.

b. Adult: not good state. Africa. Presented by Sir A. Smith.

Page 88. **Hyperolius plicatus.**

b. Adult. Coast of Guinea. Presented by Sir A. Smith.

Page 89. **Leptopelis aubryi.**

This species has been described by Smith (*Ill. S. Afr. Rept. App.* p. 25) under the name of *Polypedates natalensis*. This denomination having the priority, *Leptopelis aubryi* should be altered to

Leptopelis natalensis.

In several collections this species bears the name of *Eucnemis bucephalus*, which was never published with a proper diagnosis. There is generally a brown streak from the muzzle along the canthus rostralis through the eye and tympanum to the side of the body.

All the specimens in the British Museum Collection certainly belong to one and the same species, but in two or three of them the web between the fingers is indistinct, and that between the toes shorter. In all other respects they are so similar to *Hylambates marmoratus* (Dum. Ann. Sc. Nat. 1854, p. 162), as to lead me to believe that this frog also should be referred to *Polypedates natalensis* of Smith.

d. Adult female. Natal. Presented by Sir A. Smith. (Type of *Polypedates natalensis*.)
e. Young. South Africa.
f. Adult. Coast of Guinea. Presented by Sir A. Smith.
g. Adult. West Africa. Presented by Sir A. Smith.
h. Adult. Africa. Presented by Sir A. Smith.
i. Adult female. Presented by the College of Surgeons.
k. Adult female. Presented by Sir A. Smith.

Var. Above uniform brownish grey, sides variegated with black; belly whitish.

l. Adult. Fernando Po. From Mr. Fraser's Collection.

Page 91. **Hylodes lineatus.**

e'. Half-grown. St. Domingo. Presented by Sir A. Smith.

Page 92. **Hylodes martinicensis.**

d–f. Adult and half-grown. St. Domingo. Presented by Sir A. Smith.

Page 93. 6 *a*. **Hylodes fitzingeri.**

Schmidt, Denkschr. Acad. Wiss. Wien, 1858, p. 248. t. 1. f. 10.

Habit slender. Back smooth, sides granulated; disks distinct. Vomerine teeth in a straight series, interrupted in the middle; a rudimentary web between the toes. Above greyish brown, with black spots and streaks; beneath yellowish, with some darker specks. Andes of New Granada (4000 feet).

Page 97.

A. Duméril describes two other species of *Litoria* (Ann. Sc. Nat. 1853, p. 149), but he does not mention whether the first finger is opposite to the three others, as in *L. freycineti* and *nasuta*. Moreover the toes are broader-webbed than in those two species.

3. **Litoria punctata.**

Duméril, l. c.

Head rather broad and short; back smooth; on each side with a small glandular fold; nostril in the middle between the eye and the top of snout; vomerine teeth in two oblique series; toes nearly entirely webbed. Shoulders with scattered smaller or larger black specks. Sydney.

4. **Litoria marmorata.**

Duméril, l. c. p. 150.

Head broad and short; upper parts with scattered warts; no glan-

dular fold; nostril in the middle between the eye and the top of the snout; vomerine teeth in two oblique series; toes nearly entirely webbed. Back marbled with black. New Holland.

Page 99. **Hyla geographica.**

g. Adult. Presented by Sir A. Smith.

Page 100.—5 *a*. **Hyla pugnax.**

Schmidt, Denkschr. Acad. Wiss. Wien, 1858, p. 243. t. 1. f. 5, 6.

Fore-foot with a very distinct and partly free and moveable rudiment of a thumb; fingers webbed between the first phalanges; back smooth, no fold across the chest; head broad, short, depressed; loreal region grooved. Above greyish, finely marbled with brownish; sides of the body and of the thighs with irregular brownish cross-streaks. Chiriqui River.

Page 101. **Hyla multifasciata.**

This is only a variety of *H. boans* with very pronounced cross-bands.

Page 102. **Hyla boans.** (Plate VIII. fig. D.)

b. Adult. Brazil. Purchased of M. Parzudaki. Cross-bands very indistinct.

c. Large specimen. Pernambuco. Presented by Sir A. Smith. No cross-bands.

Page 106. **Hyla baudinii.**

c'. Adult. Mexico. Purchased of M. Parzudaki.

l'. Very large specimen. Pernambuco. Presented by Sir A. Smith.

Page 106.—24 *a*. **Hyla splendens.**

Schmidt, Denkschr. Acad. Wiss. Wien, 1858, p. 244. t. 1. f. 7.

Vomerine teeth between the inner nostrils; a rudimentary web between the two outer fingers; toes two-thirds webbed; no rudimentary thumb. The first cuneiform bone prominent. Above covered with small flat tubercles; a fold across the chest. Yellowish-greenish, shining; sides of the upper legs, hinder part of the upper arm, and upper part of the foot marbled with black. Central America.

Page 109. **Hyla euphorbiacea.**

b'. Adult male. Cordilleras. Purchased of M. Parzudaki.

Page 110. 30 *a*. **Hyla molitor.**

Schmidt, l. c. p. 245. t. 1. f. 8, 9.

Vomerine teeth between the nostrils; fingers slightly, toes entirely webbed. Upper parts quite smooth; no fold across the chest. Above uniform greyish blue; canthus rostralis with a narrow finely punctate streak; sometimes some blackish variegations on the sides and on the upper legs. Central America.

Schmidt mentions (p. 246) a variety of this species, marbled with black on the back.

Page 111. **Hyla ewingii.**

a. Adult. Australia. Purchased of M. Parzudaki as *Hyla lesueurii*.

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THE END.

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ERRATA.

Page 7, line 13, *read* toes with half or short web *instead of* toes half-webbed.

.. 7, „ 27, „ *App.* p. 23, *instead of* pl. 23.

.. 11, „ 28, *a.* Adult. —— ? *is to be erased.*

„ 12, „ 2, *read* twice as long *instead of* half as long.

„ 22, „ 8 *from bottom*: 2. *is to be erased.*

„ 68, „ 15, *read* fig. C, C, C' C', *instead of* fig. C.

„ 71, „ 2, „ toes half-webbed or less *for* broadly webbed.

„ 77, „ 31, „ third *instead of* fourth.

„ 80, „ 9, „ heel *instead of* keel.

„ 80, „ 22, *after* warts *add* heel with a cutaneous spur.

„ 89, „ 24, *read* toes half-webbed or less *for* broadly webbed.

„ 92, „ 14 *from bottom*: *read* Ann. Sc. Nat. 1854 *for* Catal.

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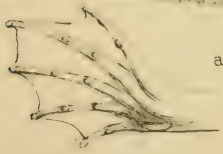

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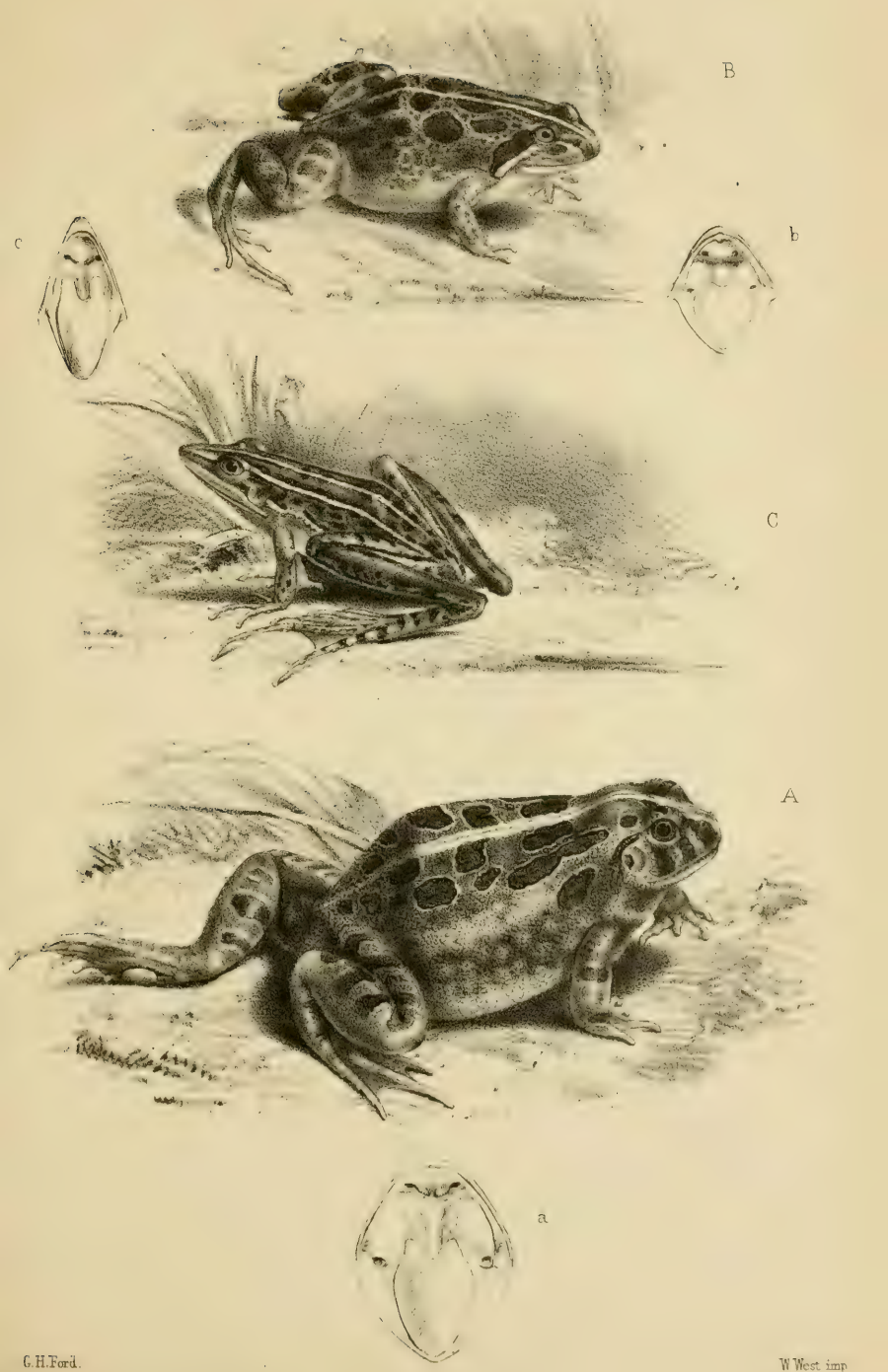

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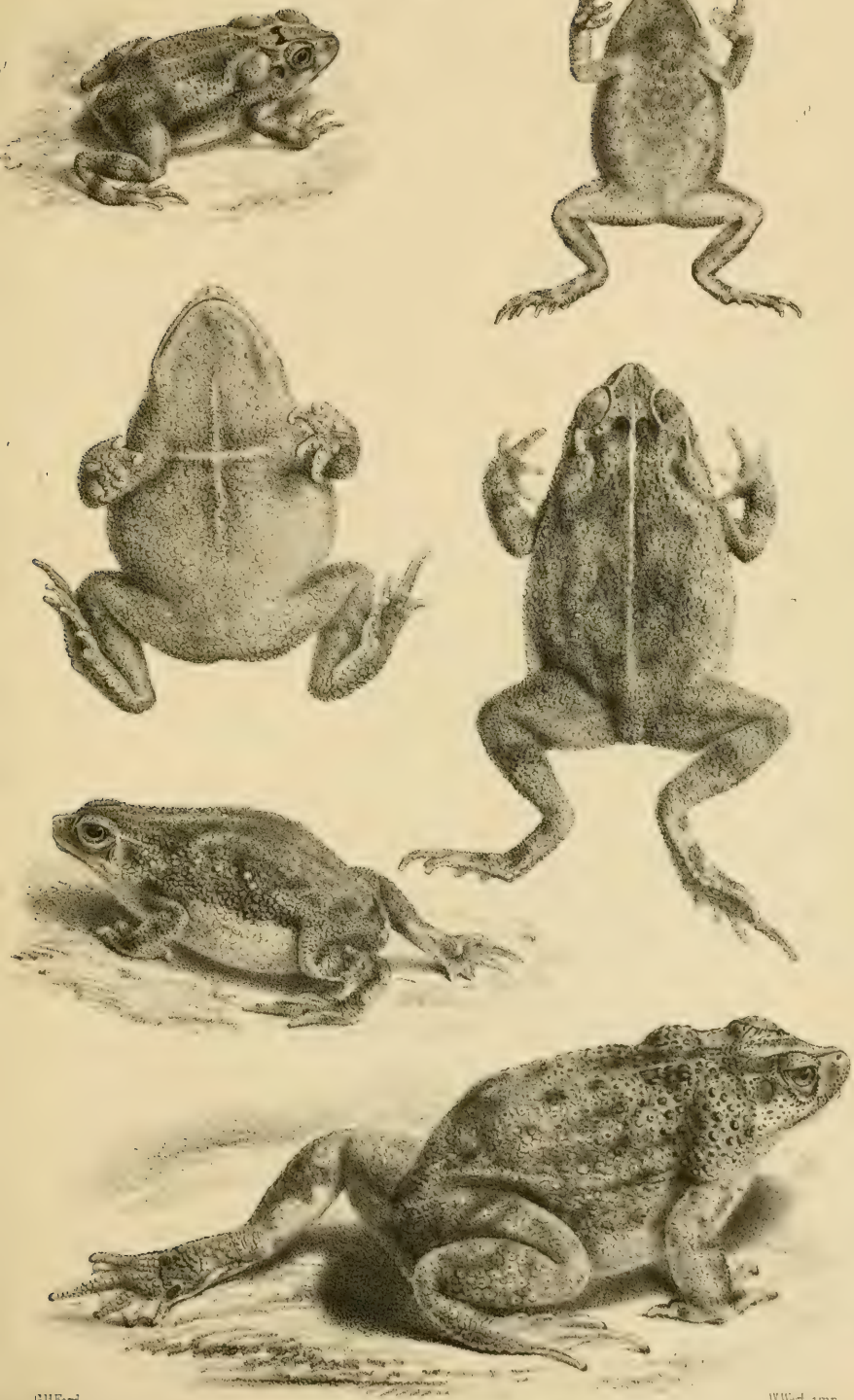

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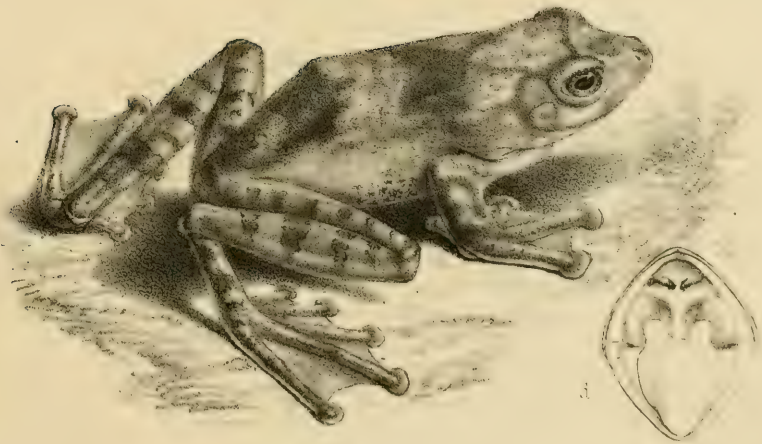

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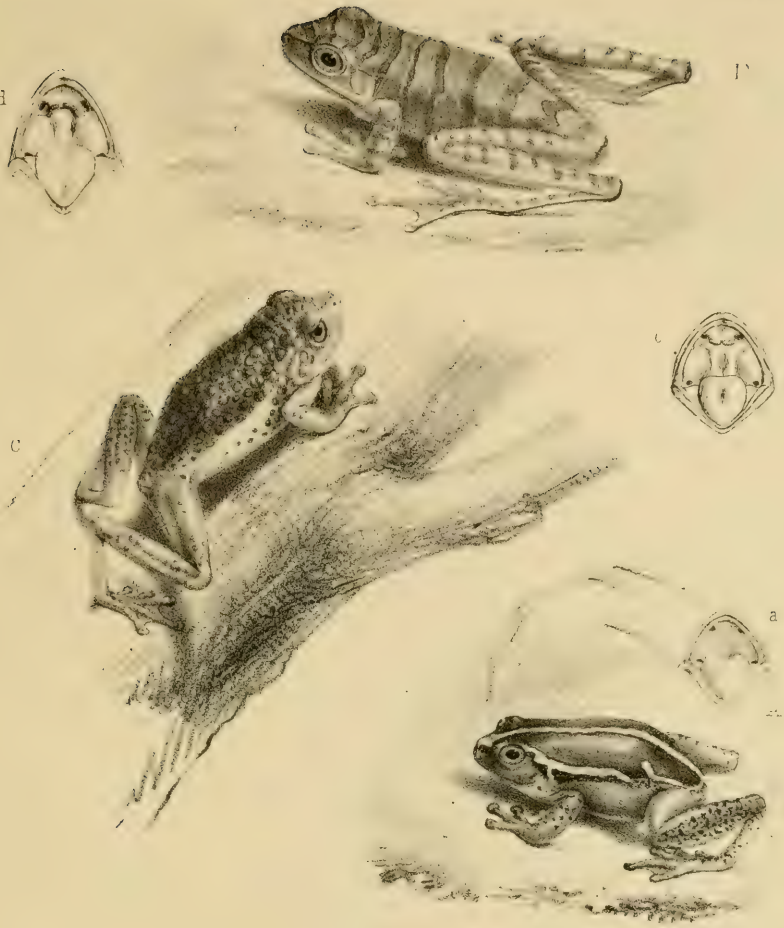
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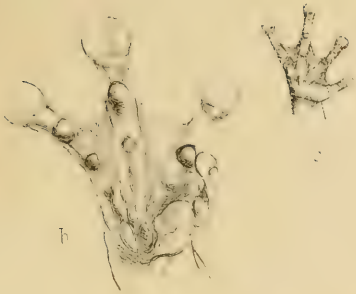

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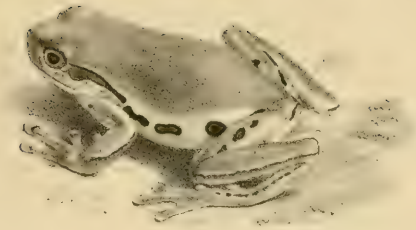

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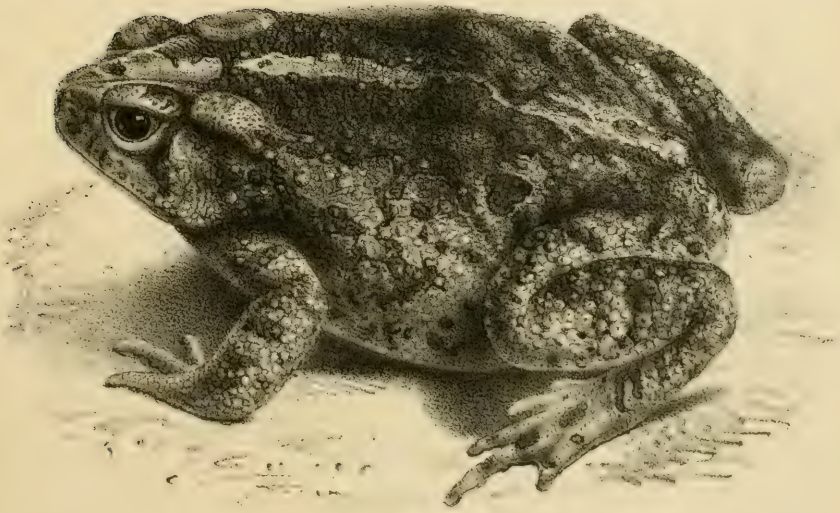

A

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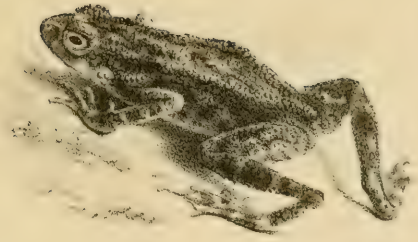

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